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ABSTRACT

The California Department of Education convened a task force to determine how the learning environment can be shaped to support statewide educational reforms designed to make California schools places of community pride that also help students excel. This two-part report outlines design implications common to all grade levels, as well as those specific to certain grade levels, and identifies design implication concepts derived from each of the task force's reform reports. It lists educational concepts with methodologies and design implications specific to each of the California grade-level reform papers: "Caught in the Middle" (1987); "Here They Come: Ready or Not" (1988); "It's Elementary" (1992); and "Second to None" (1992). Also included are descriptions of several award-winning schools whose master planning has embraced educational reform in their design. (Contains 87 references.) (GR)

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The Form of Reform

School Facility Design Implications for California Educational Reform

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The Form of Reform

School Facility
Design Implications
for California
Educational Reform

Prepared by
School Facilities Planning Division
California Department of Education

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The guidance in *The Form of Reform* is not binding on local educational agencies or other entities. Except for the statutes, regulations, and court decisions that are referenced herein, the document is exemplary, and compliance with it is not mandatory. (See *Education Code* Section 33308.5.)

Prepared for publication
by CSEA members

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"The school's physical environment can strongly affect the students' and the community's perceptions of the safety of that school."

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Foreword

California Department of Education reform reports, *Caught in the Middle* (1987), *Here They Come: Ready or Not* (1988), *It's Elementary* (1992), and *Second to None* (1992), provide a foundation for the development of facilities to house the teaching of specific curricula. To this well-laid foundation, we add the Challenge School Districts Reform Initiative and the legislative mandate to reduce class size in kindergarten and grades one through three. How then can the learning environment be shaped to support these educational reform objectives?

To answer this question, the Department of Education convened a task force representing the many groups involved in the education and educational environment of California students to make recommendations on school facility design. This task force arrived at the following conclusions:

- **Educating our diverse student population presents challenges** that can be met only by carefully defining each community's needs and designing a curriculum to meet those needs. Building plans cannot be separated from wider education plans. Whether learning takes place in large or small groups, whether it is teacher-directed, is individualized, or is student-centered and student-paced, it requires a variety of flexible spaces. Technological changes, combined with variations in learning and teaching styles, alter approaches to school building design.
- **The facility must reconnect schools and communities** to use all the resources we have and make them directly available to our students. The student, the teacher, the parent, the administrator, and the architect are all vital to the design of a school that will support the education program of the district and draw the community into its schools.
- **The primary business of schools is to ensure academic performance,** but there are subsidiary objectives as well. Schools help develop the whole student, instill enthusiasm for learning, promote physical activity and health, and encourage positive social relationships. Comfortable and interesting school environments support all these objectives.

- **The focus on student achievement requires a school campus to provide essential specialized spaces for presentations, technology, and storage spaces** as well as classrooms and libraries with access to printed, technological, and audiovisual resources. Some schools may also need to provide supportive specialized space for child care and development programs, family centers, and even garden projects.

The first step for the school district is to develop a *facilities master plan* that reflects the ideas outlined in this publication. The second step is to develop *educational specifications* that define the methods needed to communicate the educational program to the students. The architect uses this educational specification to translate the curriculum into a beautiful, economical, and functional educational environment.

This publication is intended to be a guide for parents, educators, and design professionals in the design process. A design manual would be inappropriate in a world where the "fixed" rules of life are not bedrock at all but are subject to change.

Our schools are entering a new century that will be quite unlike the century now closing. We hope this guide will help planners to visualize a schoolhouse that is not just a place to sit but a place capable of educating students to compete in the twenty-first century's global society, a place of pride for the community, and a place in which our young people know that our society values education. Our schools should not be a trip back in a time machine but rather a window to the future.

Delaine Eastin

DELAINE EASTIN
State Superintendent of Public Instruction

Preface

Here They Come: Ready or Not, *It's Elementary*, *Caught in the Middle*, and *Second to None*, reports published by the California Department of Education, initiated statewide educational reform efforts from preschool through grade twelve and contain significant implications for school facility design. To identify the major design implications contained in each report, the California Department of Education convened a statewide task force composed of educators, facility planners, and architects involved in the design and construction of school facilities. The task force was further divided into four subcommittees (preschool, elementary, middle, and high school) to identify design implications related to each grade level. *The Form of Reform: School Facility Design Implications for California Educational Reform* is the product of this task force.

The Form of Reform outlines design implications common to all grade levels, as well as those specific to certain grade levels, and identifies design implication concepts derived from each of the reform reports. *This document is not intended to promote a particular instructional strategy, approach, or alternative but to offer guidelines and components that are valid regardless of the selected mode of instruction.* Construction may not necessarily be the only solution to the problem of overcrowding. For example, if a school district is modernizing or reconstructing and desiring additional instructional space, the district may consider instituting multitrack year-round education, which would free more space.

Many instructional strategies do not require major design considerations. However, with the implementation of class size reduction in kindergarten through grade three, careful consideration should be given to what is an adequate instructional space. A smaller class size does not necessarily mean smaller classrooms. In addition, extensive consideration must be given to the growing needs of students, expanded curriculum offerings, and changing instructional strategies. Educational changes can be better implemented with a dramatically reduced teacher-student ratio. Reducing classroom space to match a reduced teacher-student ratio is not advisable and can hinder successful implementation of instructional strategies.

The readers of this document are assumed to be local governing board members, district administrators, teachers, parents, school facility planners, architects, contractors, and others involved in designing and modernizing schools. For this publication to be a useful planning tool, planners should commence by discussing the meaning of the reform concepts, the approaches needed to implement these concepts, and the design implications for the local educational program. Because local educators, parents, and the community are integral participants in this planning process, they must be cautious not to delegate the work of defining concepts and approaches exclusively to design and construction professionals.

This publication further assumes that readers will have varied degrees of knowledge regarding current educational reform concepts and the school design implications of those concepts. The school design concepts discussed illustrate only some of the design implications related to educational reform. This publication does not include all elements of building design nor is it intended to be a school design manual.

Careful definition and development of the local educational program and goals are necessary to create facilities that will accommodate specific curriculum needs. After working with the school community, educators are charged with conveying an understanding of the goals and the planned curriculum to architects and facility planners. Using these educational specifications, the architect and facility planner must develop a plan that is functional, aesthetically pleasing, and supportive of local educational goals.

When planning has been thorough and has included all members of the school community, and relevant elements of the reform documents have been reflected in the design of the school, then the school is ready to support the innovative curricular strategies essential for the success of its students in the twenty-first century.

Essentially, this publication is divided into two parts:

- Part I focuses on school facility design components related to educational reform concepts common to all grade levels, prekindergarten through grade twelve.
- Part II lists educational concepts with methodologies and design implications specific to each of the grade-level documents.

The challenge in future designing is to design flexible and increased instructional spaces and an instructional environment that functions as a tool for learning, enabling students to be responsible for their own education. A parallel challenge is to design a process that embraces communities as essential co-partners in this venture and adventure called education. As always, we look for models of excellence, flexibility, and vision. Each year, the Coalition for Adequate School Housing (CASH) and the American Institute of Architects, California Council (AIACC) collaboratively identify Excellence in Design schools—schools that, in some measure, capture a vision of change; exemplify extraordinary planning; and utilize resources in new construction, modernization, or reconstruction. Award categories are excellence, honor, and merit. In 1997, 15 schools (elementary, middle, and high schools) were identified. Special thanks are extended to those architects who packaged and shared their "cutting edge" designs exhibited in each component of this publication.

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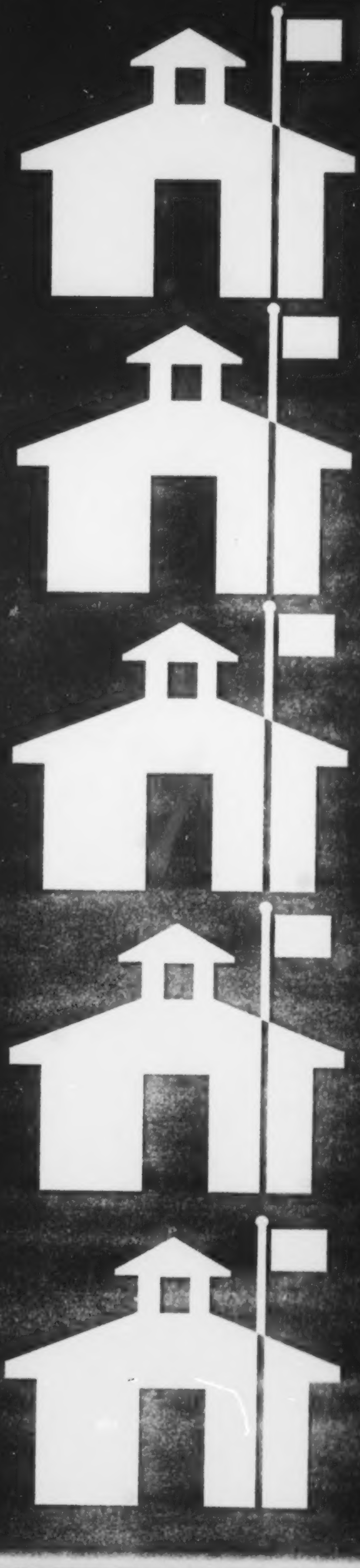

Part I

Design Implications Common to All Grade Levels

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The four inaugural educational reform documents developed by the California Department of Education—*Here They Come: Ready or Not, It's Elementary, Caught in the Middle,* and *Second to None*—enumerate reform concepts relevant to specific grade levels.[1] However, making California schools places of community pride in which students realize the highest expectations of them is a goal that spans all grade levels. Many reform concepts and their implications for design are relevant to kindergarten through grade twelve.

A general discussion of these shared concepts follows. An example of a school embodying those concepts is provided at the end of Part I. Concepts having design implications for particular grade levels are discussed in the appropriate sections in Part II.

Technology/Media

Technology and media pervade virtually every aspect of the educational reform effort. For instance, second graders can use computers in their classrooms to gather information from electronic databases and produce their own personal newsletters, which are then sent to family and friends using electronic mail. In other instances, students may carry a computer disk that records and stores their entire educational history.

The importance of technology is emphasized in two California Department of Education reports: *Every Child a Reader: The Report of the California Reading Task Force* (1995) and *Improving Mathematics Achievement for All California Students: The Report of the California Mathematics Task Force* (1995). *Every Child a Reader* states that "adequate and appropriate technology should be used to support the reading program, including the classroom instructional program, the training of current and new teachers, and the involvement of parents in their children's education." *Improving Mathematics Achievement for All California Students* also reinforces the importance of technology: "Every child and every teacher has a right to a full complement of instructional materials, including textbooks, manipulatives, and technology."

Engaging students in the curriculum requires that students and teachers have access to a wide variety of information. Hardware and equipment to retrieve and store information require space designed into classrooms, offices, and teacher planning areas.

---

[1] These documents may be purchased from the California Department of Education, Publications Division, Sales Office, P.O. Box 271, Sacramento, CA 95812-0271.

Communication equipment rooms, apparatus closets, library media and video production centers (potentially busy, exciting hubs of activity), satellite wiring closets located within the classrooms, and ducts and raceways to accommodate wiring and cables—each of these requires space. This infrastructure must be provided in the design of facilities, and all of it must have access points designed for future growth and revision. The integral design of wire and cable space is necessary to secure equipment and is especially critical in schoolrooms to protect the equipment from curious students and to ensure student safety.

Ultimately, technology will redefine the learning environment wherein the teacher is a manager of information, students work in teams at work stations, parents communicate with teachers through electronic mail, and schools are partners with other local government entities in the formation of "smart" regions that promote and facilitate economic growth. The application of technology in the classroom is designed to support the learning environment and allows for a more smooth transition from school to work.

Aesthetics

Beautiful and functional interior and exterior environments create a school climate that affirms that each student is welcome and that the institution promotes safety, security, and a sense of belonging. Good design establishes an environment of professionalism for staff, enhances and supports student learning, and demonstrates the importance of education to both the community and society at large.

The use of landscaping, student artwork, and exhibit space can convey a sense of ownership and belonging and reinforce the concept that school is a richly stimulating place. The exhibition of student work promotes pride and a sense of ownership. Displaying student work reemphasizes that student work is as important as professional work. If children have a natural propensity toward beauty, that propensity may be repressed when they sit in sterile classrooms for more than 18 years of their lives.

Natural site features, such as mature trees and rock formations, are important considerations in site selection and utilization. Barn and shed forms can be pleasing in a rural setting. Simple structural styles shown below lend themselves to the use of relocatable structures.

LIONAKIS-BEAUMONT DESIGN GROUP

Safety and Security

Students who fear for their safety are not free to learn; teachers who fear for their safety are not free to teach. Ensuring that school is a safe place has to be the number one challenge of educational enterprise. Schools must protect and nurture; they must be that guaranteed safe place in the students' lives. As schools continue to foster safety, they must simultaneously strive to be inviting, conducive to learning, and available for planned community use but secure from vandalism and theft. *Every Child a Reader* emphasizes that "Parents, schools, and communities must work together to ensure that students attend school every day [in] schools that are safe [and] student-centered."

Campus buildings, play areas, and parking lots should be arranged to create a sense of security and allow for supervision of the greatest portion of the campus with the fewest individuals. Recesses in buildings and blind spots hide potential problems and should be eliminated from facility design. Dangerous vehicular circulation and parking areas that allow vandals easy access to campus buildings should be avoided.

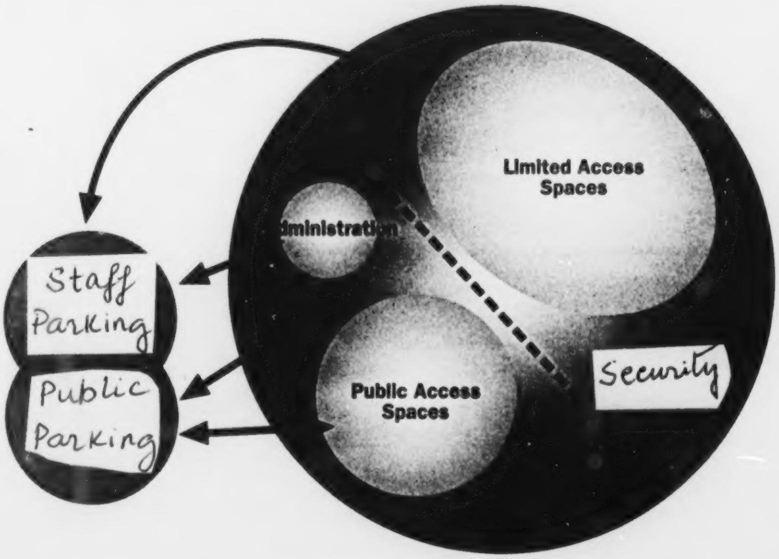
Security should be considered in the selection of doors and windows, the use of fencing and outdoor lighting, the siting of parking areas, and the design of landscaping and playfields. Monitoring devices and communications equipment should be included in the design of the school

> **"Of the schools that I have seen, a number of things jump out at me as being reasons why I consider them model schools. Not only do these schools deliver the educational program, but they were designed to be cost effective in terms of maintenance and kinds of building materials used, as well as being safe and secure."**
>
> Henry Heydt, Ed.D., Assistant Director, School Facilities Planning Division, California Department of Education. Quoted in "Building the Model School," in *American School & University*, October, 1995.

Outdoor Space/Parking

Parking provided for:

- **Community events**
- **Parent-community involvement in teaching**
- **Lifelong learning opportunities**



Provide separation of public access spaces and limited access spaces with obvious security provisions, such as fencing and locking devices.

(Diagram, courtesy of Stafford, King, Weise Architects.)

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facility. Rest rooms, often the locale for violence, should not be roomy enough for gatherings and should be made of materials that are, as much as possible, vandal resistant.

Expanding the use of technology in both the instructional and administrative aspects of the school program creates a need to protect expensive equipment installed in classrooms, offices, and teachers' work areas.

Consideration also must be given to the fact that schools will be designed to be the focal point of the community. For instance, *Improving Mathematics Achievement for All California Students* suggests that schools "support a broad range of activities to inform and involve parents" and "have parents participate in a variety of mathematics events . . . each year." Encouraging parent and community use of the schools in this way, especially before and after school hours, also means the facilities must be designed to allow access to certain parts of the school while securing others from the public. Such design encourages the concept of joint or shared use of facilities between local governmental entities. As tax dollars become more scarce, prudent investment in capital outlay projects serving a common taxpayer base becomes essential. Examples of such projects include libraries, park and recreation space, maintenance facilities, performing arts complexes, and computer training facilities. Community and parental involvement in a school encourages the concept of the school as a neighborhood focal point, source of identity, and place of pride.

Students provided with project-based, hands-on experiences will create more tangible work as a part of assessment. Therefore, secure project storage for student work is essential.

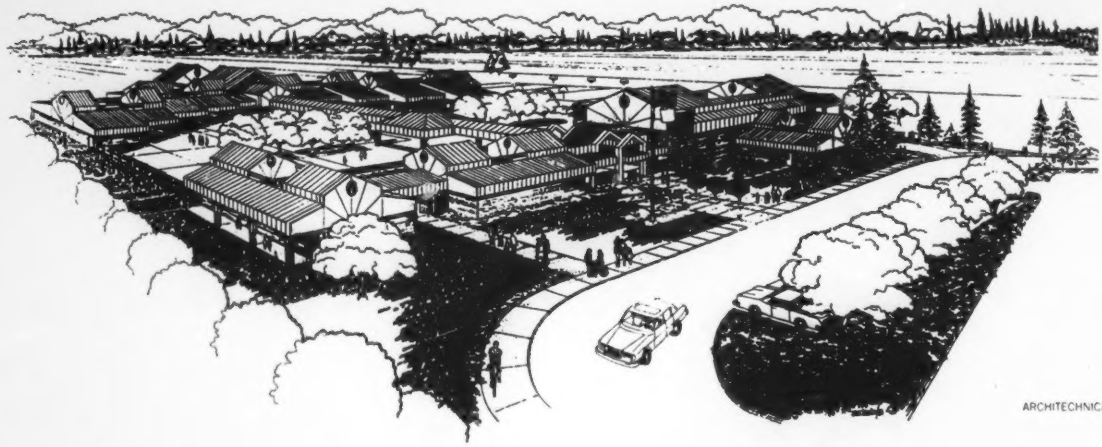
"My perfect school is where they have a place after school for kids to wait so they won't get stolen by strangers."

Elementary student, quoted in *Safe Schools: A Planning Guide for Action.*

Flexibility

Educational research on instructional space has long emphasized the need for classrooms and school facilities to be flexible in terms of curriculum adaptation and in terms of programs that will require building use beyond the traditional school day. *Every Child a Reader* and *Improving Mathematics Achievement for All California Students* reinforce earlier research. *Every Child a Reader* emphasizes the need to create "flexible" grouping to accommodate student learning differences; *Improving Mathematics Achievement for All California Students* outlines mathematics standards and skills (in such areas as measurement and patterns and functions) that can best be taught in flexible instructional space.

A curriculum that encourages all students to explore, experiment, and experience requires many different kinds of spaces and spaces that convert easily to accommodate different activities and instructional purposes. In addition, the need for teachers to supervise and coordinate varied groups meeting at the same time affects the locations and



A clearly defined, supervised main entrance and an open, interior courtyard help make this a safe school. Loading and unloading zones for automobile passengers are separated from the street. Bus loading is a recessed loading lane at the side street.

relationships of instructional spaces. In flexible space arrangements, students will spend much more time working in collaborative groups. This collaboration will allow them to learn from watching each other and will also offer multiple leadership opportunities within groups. Space for groups to work on long-term projects will be available, and all curricular areas will be connected to real life through either simulations or actual experiences.

Building systems should be flexible and should reflect long-range technology planning. Large teaching stations should be easily reconfigured to provide for flexibility. For example, learning centers with movable furniture can accommodate simultaneous activities with student groups of varied sizes. Nonbearing walls that can be removed in remodeling and an accommodating ceiling or lighting grid are good starting points of flexible design.

Finally, schools may operate on an extended day (6 a.m. to 10 p.m.) or an extended year (single track or multitrack year-round education) to allow student and community access to resources and instruction beyond traditional hours. As alternative schedules are explored and used, energy management and life-cycle costing are important issues.

Design features of the learning environment might also include alcoves for small-group discussions or project set-up, free-standing screens, or movable furniture and walls that can create separate spaces or can join two spaces to one another.

Community use requires small and large spaces for before- and after-school programs. Child care groups, community meetings, volunteers, instructional aides, visiting lecturers, and other community groups and agencies may use the facilities on a regular basis for clinics, health services, counseling, and adult education. Minimal administrative space will be needed to provide for coordinated services with such agencies.

Flexibility guards against obsolescence. A flexible facility accommodates changing technology, a changing curriculum, and changing demographics. However, spaces should not be so flexible as to be "multi-useless." Some activities, such as video production, musical recitals, dance, science, and drama, require defined space, sound isolation, and special equipment that cannot be moved. In these cases, design should match planned use. Table 1 provides the noise range of various sounds and can be used to determine appropriate locations for noisy or quiet activities.

Table 1. Sound-Level Ranges (In Decibels)

Decibel (db)	Sound
108	Threshold of tolerable feeling
95	Noise in airplanes
70	Noise in a train
65	Upper-limit range of speech (ordinary conversation)
60	Noise on average busy street
35	Soft radio music in apartment
35	Lower-limit range of speech (ordinary conversation)
20	Average whisper, 4 feet away
10	Rustle of leaves, gentle breeze
0	Threshold of audibility

Note: Barriers need to be provided to separate noisy activities, such as music or shop, from quiet activities. Noise barriers include composite walls, baffles in return-air plenums, or special caulking at common walls. Simply moving two incompatible activities away from one another is a technique for creating a noise barrier.

Sound levels below 60 db can be blocked by building composite walls and caulking at wall openings and edges. Sound levels above 60 db require special mitigation, which may be prohibitively expensive.

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Lighting

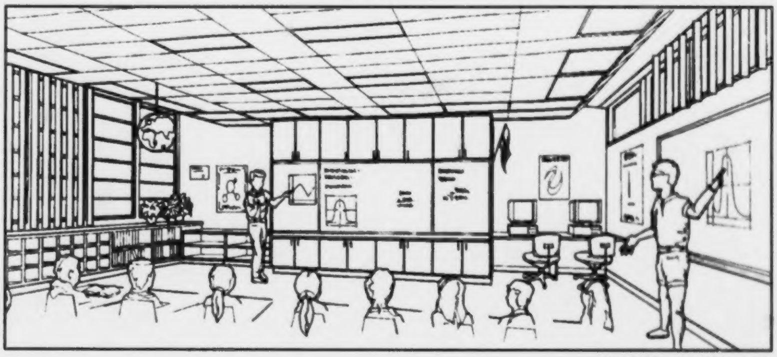
Schools should be well lighted. Outdoor lights provide safety and security and contribute to (or detract from) the aesthetics of the school. Indoor lighting, a critical factor for a student's comfort and performance, can also make a school more pleasant and attractive, create a feeling of spaciousness, delineate areas of different functions, stimulate learning, and modify behavior.

The Illuminating Engineering Society of North America makes specific recommendations in several areas: reflectance, fixture brightness, ceiling height, wall luminance (windows), distribution, and energy conservation. To ensure the proper use of materials, colors, and lighting fixtures and systems, the architect and/or consulting engineer should be involved in the preliminary design phases of the project.

Storage and Furniture

Implementing performance-based accountability and assessment requires student projects, which are often stored in the classroom. For example, a third-grade project might require students to build a toothpick longboat and make artifacts of clay: both projects require secure storage space. Storage pieces can be movable or built-in but should conveniently house instructional materials, portfolios, and other work on shelves and drawers adjustable to different heights. Open shelves, cubbies, or closets may provide storage; however, they should allow for easy retrieval of students' materials. Such storage spaces not only are tools for classroom organization but also teach students the valuable lesson of responsibility for returning items to their rightful places.

Expanding the use of technology in the schools influences decisions on the types of furniture and equipment used. For instance, computer-related furniture should promote good posture and minimize eye strain.



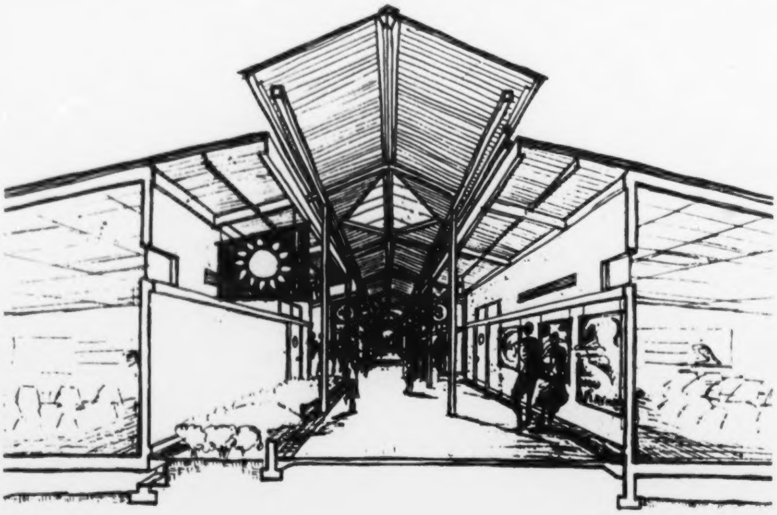
RAINFORTH/GRAU ARCHITECTS

Educational reform concepts have a significant impact on the type and amount of storage that will be needed. This drawing shows classroom inclusion of a "smart" teaching wall, computers for electronic storage, and a variety of bins, cubbies, and lockers to hold student projects and portfolios.

Display Areas

When students engage in active, hands-on learning activities, they produce items that will need to be displayed as part of an assessment process and as part of the effort to recognize and support student achievements. In addition to display areas dispersed throughout the campus, a large kiosk or secure display case in the middle of the campus quad can instill pride in and admiration for the work of peers. A special courtyard, for example, might be reserved for award presentations and the display of award-winning work. One school district calls this area the Winner's Circle.

Display areas for community activities and resources might also be considered as a way of tangibly linking the school to the outside world.



LIONAKIS-BEAUMONT DESIGN GROUP

The mall concept shown here brings a festive atmosphere and provides places for the display of student work. Such space can be provided at permanent construction or in relocatable classrooms.

Cleanliness

Schools should be clean. A clean, well-maintained school contributes to the health, happiness, and character development of its students. Additionally, a well-maintained school promotes a favorable community attitude and helps develop respect for school property. Conversely, inadequate maintenance and disrepair can breed contempt for school property, expressed by littering, vandalism, and theft. Inadequate maintenance further results in early degradation of the facility, the subsequent need for early replacement, and loss of capital investment.

Building design should anticipate future maintenance needs. Energy efficiency, storage space, service areas, and work stations are important design features. *Therefore, building materials should be selected for their durability as well as ease of maintenance.* Classroom space allocation and well-chosen furnishings should ease custodial work.

Socializing Space

Spaces for productive socialization among students and staff are needed to engage students in the curriculum, to create a school climate conducive to learning, and to promote interdisciplinary teaching and collegiality. Cooperative work and assessment are enhanced if students have places to discuss their projects informally. Areas such as courtyards, amphitheaters, and other interior or exterior "supervised" areas can provide excellent areas for socialization, where conversation and eye contact are possible and fun. Easy access to social experiences promotes communication among students and staff and greatly contributes to a positive school climate. The kinds of space conducive to promoting a sense of identity for smaller groups of students and teachers should be considered. In addition, such space can contribute to a sense of place and history by consciously incorporating design features into the architecture or through the use of art in public places to convey the county or city heritage.

Intimate outdoor spaces help create focal points for study groups, schools-within-the school, or clubs.

DREYFUSS AND BLACKFORD ARCHITECTS

Physical Education

Physical education facilities should be designed to encourage community use and interaction among students, parents, and the school staff. Security and access must be considered in the design of the facilities, especially for after-hour use. Ease of public parking and convenient access to public transportation should be considered in the layout of the school on the site. This is another opportunity to share capital outlay cost with other local governmental entities. For example, a 50-meter pool that neither the city nor the school district could afford individually might be attained through such a shared venture. The existence of a professional swimming facility is an exceptional training benefit for students as well as a source of community recreation and neighborhood pride.

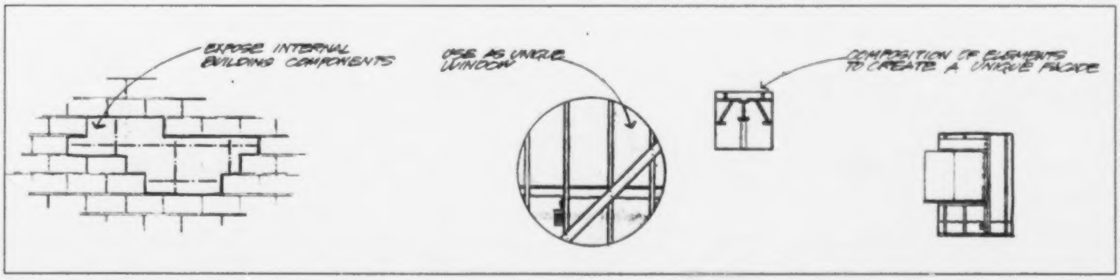
Outdoor Space

Natural and landscaped areas can be actual classroom space for natural sciences (such as botany, biology, agronomy, and ecology), for informal physical activity, and for meetings.

Quiet outdoor areas—a garden, shade, a bench, running water—promote reflection, reading, and writing and provide opportunities for discovery and challenge. Providing space for a variety of outdoor activities can foster student interest in school and enhance the students' desire to become involved in planning, planting, and maintenance of outdoor space.

Utilities and Design

Utilities and design features may be used as learning tools, with "windows" provided to show the interior of wall spaces, exposed piping, and conduits or building structures exposed to illustrate basic engineering principles. Another example of the educational utility of design is the use of resilient flooring squares instead of carpeting in classrooms used for mathematics instruction; the patterns become tools in teaching principles of measurement and geometry. Students can practice energy conservation


EXPOSE INTERNAL BUILDING COMPONENTS
USE AS UNIQUE WINDOW
COMPOSITION OF ELEMENTS TO CREATE A UNIQUE FACADE

WOLFF, LANG, CHRISTOPHER ARCHITECTS

Utilities and support systems may be designed to be used as learning tools, with "windows" provided to show the interior of wall spaces and its piping and conduits, or structures exposed to illustrate basic engineering principles. Integrated infrastructure space should be provided for technology, telephones, and other equipment.

by consulting the special measurement systems that graphically display energy usage in different parts of the building. Students will understand the structural and physical environment, such as where the water comes from, where the garbage goes, how power is delivered to the school, and will perhaps become better stewards of their environment. These concepts can be integrated into various school curricula to enrich the school experience in a meaningful way.

Learning environments will be constructed from environmentally sensitive materials, and indoor air quality will be of paramount concern. Environmentally sensitive materials are made of renewable resources, require simple maintenance, and are inherently free of allergens and toxic by-products.

Performance and Assembly Space

Because a critical part of accountability and assessment includes student performances and presentations before groups of various sizes, a variety of designated or adaptable performance spaces in addition to the classroom may be needed (e.g., multipurpose cafetorium, formal theater, and informal amphitheater). High school students might produce multimedia "term papers," which include text, sound, and video, as learning projects. These "term papers" might, in turn, require an appropriate viewing studio. Smaller performance areas may be a portable stage in the corner of the classroom, an outdoor amphitheater, or two or more classrooms that can be combined or divided with movable or folding walls.

The design of indoor and outdoor spaces should include provisions for technology, noise barriers, acoustical enhancement, displays, videotaping, exhibitions, and active participation in performances.

Teacher as Professional

Futurists emphasize the need to plan for an enriched, efficient environment that is more supportive of teachers as professionals. With increased accountability and responsibility, teachers will be perceived in a more professional light. Teachers will expect professional work space with an area for storage of personal belongings and for small group conferences with parents or students. Preparation for teaching and planning with colleagues will be supported with well-equipped spaces for working and conferencing. Teachers will have telephones in the classroom, video display monitors, and a computer work station connected to a local area network through which they receive electronic mail. They will have a connection to the Internet to support and enrich classroom instruction.

1997 CASH/AIACC Excellence in Design Award

Award of Excellence

Jean Parker Elementary School

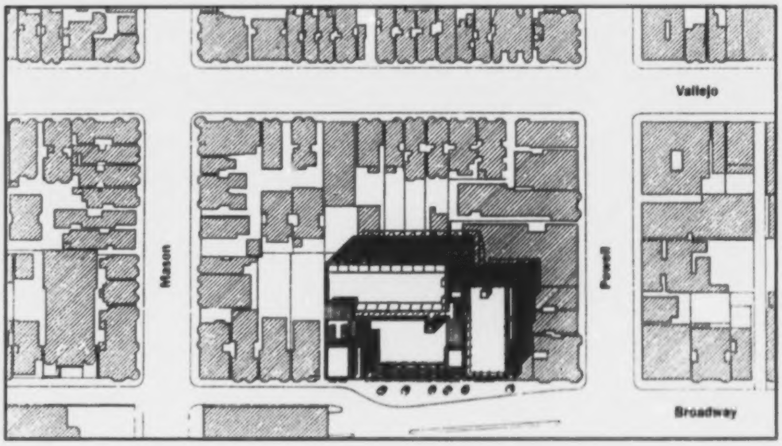
Jean Parker Elementary School, San Francisco Unified School District, San Francisco, California, is offered as an exemplary school developed on an affected urban site.

Construction Data on Jean Parker Elementary School	
Grades:	Kindergarten through five
Student Population:	550
Type of Project:	New construction
Funding Source:	State aid
Construction Completed:	January, 1996
Square Footage:	37,000 (84.91 square feet per student)
Construction Cost:	$8,800,000 ($201.37 per square foot/ $16,000 per student)
Architects:	Kwan Henmi Architecture/Planning, Inc./ Reid & Tarics Associates Contact: Kiyoshi Matsuo, AIA (415) 777-4770
School District:	San Francisco Unified School District Contact: Arturo Taboada (415) 695 -5497
Contractor:	S. J. Amoroso Construction Co., Inc.

Jean Parker Elementary School replaces an unreinforced masonry structure that was severely damaged in the 1989 Loma Prieta earthquake.

Basic Site Design

The school is designed to maximize the usable playground area on the restricted 0.6-acre Chinatown site and is centered on a south-oriented courtyard that provides protection from the year-round sweeping winds. The school is organized into three distinct parts to reduce the mass of the building and blend in with the surrounding densely populated neighborhood. Its multielement facade complements the small scale of the surrounding neighborhood, incorporates elements of the historic school demolished on the site, and links the school to its neighbors and to its history. The main entry is adjacent to the administrative areas for ongoing visual supervision and incorporates a terra-cotta entry portal salvaged from the demolished school. The north-oriented classrooms are organized efficiently in a three-story block and have bay windows in keeping with Bay Area tradition. The 5,000-square-foot multipurpose room contains a full-stage music room and a community kitchen and has its own separate public entry for after-school events. Two rooftop play terraces provide additional playground spaces. The design supports the school's curriculum focus on language arts, which is integrated throughout all the subject strands.



Site Plan of Jean Parker Elementary School

The existing school site is small but located for easy access by neighborhood students. The surrounding residential buildings are on a small scale, and minimal open space is available to neighbors.

Floor Plans of Jean Parker Elementary School

First Floor

1. Entry Portal
2. Administration
3. Supply Room
4. Kindergarten and First-Grade Classrooms
5. Kindergarten and First-Grade Classrooms
6. Multipurpose Room
7. Stage/Music Classroom
8. Student Nutrition Kitchen
9. Community Kitchen
10. Storage
11. Play Courtyard

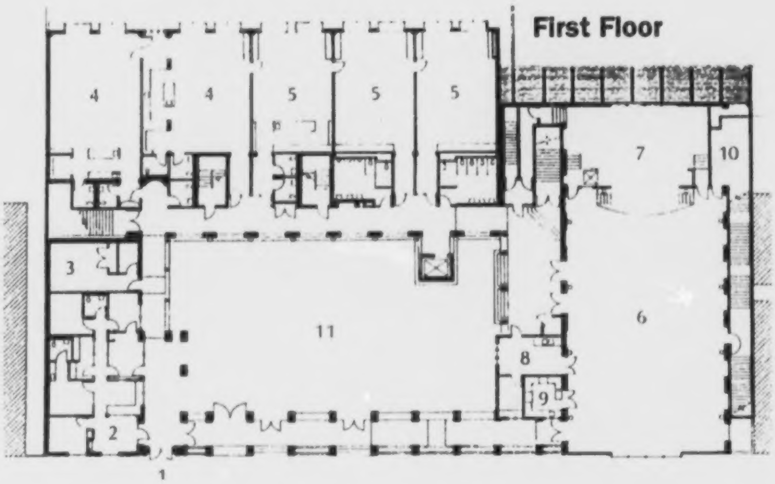
Second Floor

1. Library
2. Staff Workroom
3. Staff Lounge
4. First- and Second-Grade Classrooms
5. First- and Second-Grade Classrooms

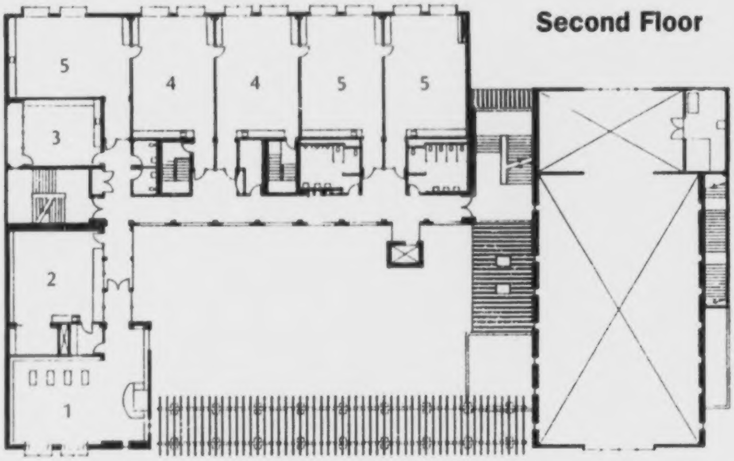
Third Floor

1. Science Resource Room
2. Third-, Fourth-, and Fifth-Grade Classrooms
3. Audio-visual Storage Room
4. Second- and Third-Grade Roof Play Yard

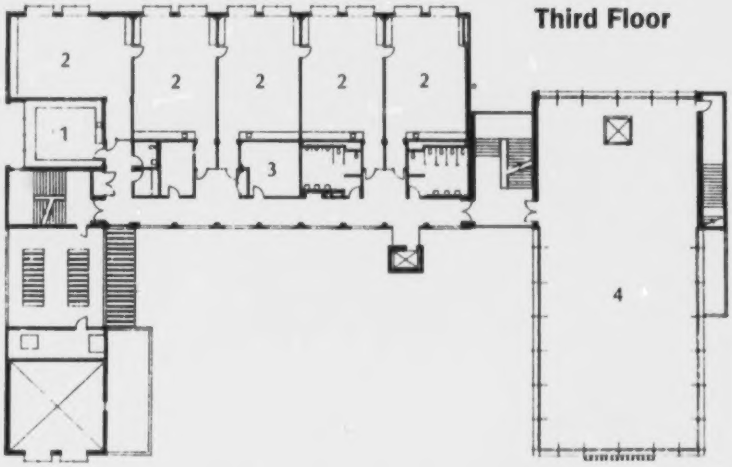
First Floor



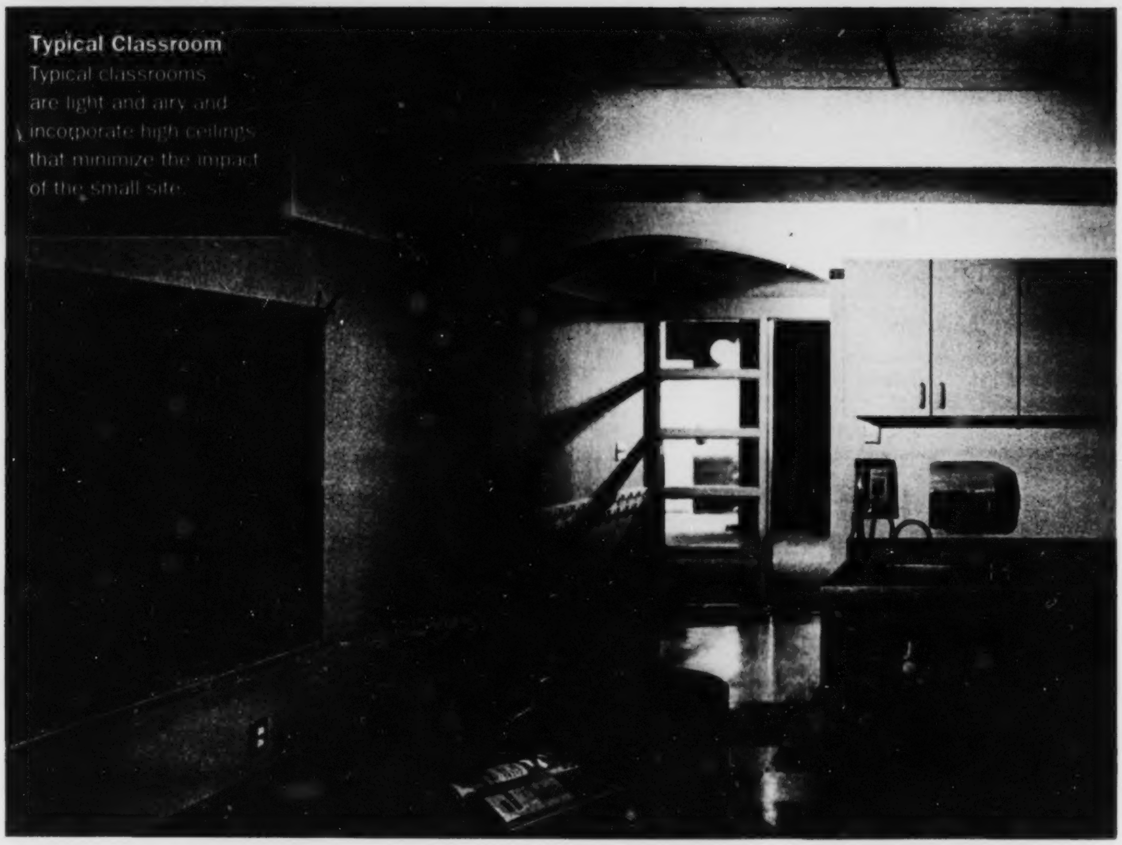
Second Floor



Third Floor



Outdoor Play Area
Rooftop playcourts offer outdoor educational spaces with magnificent views.



Typical Classroom
Typical classrooms are light and airy and incorporate high ceilings that minimize the impact of the small site.

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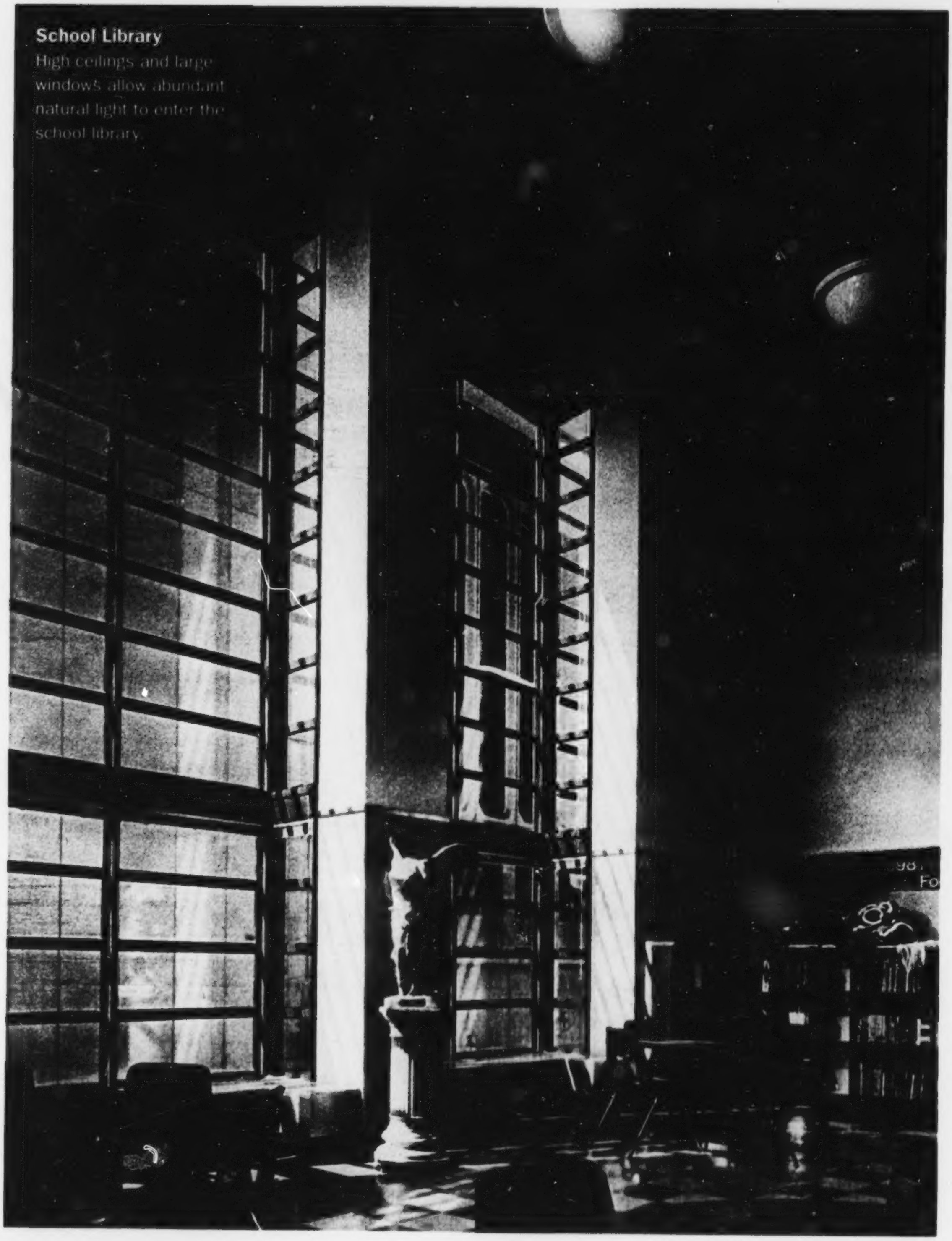

School Library

High ceilings and large windows allow abundant natural light to enter the school library.

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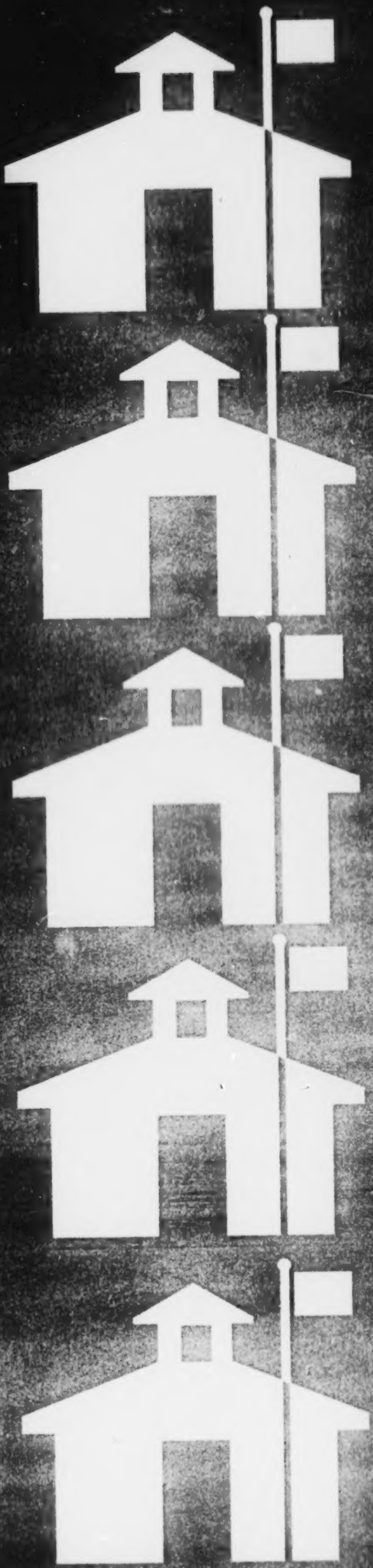

Part II

Design Implications Specific to Grade Levels

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As the Design Implications Task Force reviewed the California Department of Education reform documents and identified the key concepts in each one, it discovered that most of the work involved developing consensus on what the concepts really meant. Developing related curriculum to implement the concepts was easier but varied greatly with individual district goals. Design options were dependent on curriculum requirements, but because facilities are relatively static, it became clear that it was imperative to develop consensus not only on the meaning of the concepts but also on the elements of each curriculum before a list of design implications could be developed.

"One outcome of our expanded community process was to place a school where it would maximize the use of the school and the park for the benefit of the community."

Michael Sprague, Chair of the City Heights Planning Committee, Rosa Parks Elementary School, San Diego Unified School District.

TSUBOI/MAMUYAC, LANDSCAPE ARCHITECTS

This section is organized by the four reform documents from which salient concepts were selected. First, each concept is defined, then the curriculum methodologies are determined, and facility design implications are listed. These concepts are reinforced in the Challenge School Districts Reform Initiative and detailed in reports published by task forces convened by Superintendent Delaine Eastin in 1995–1996 in the areas of reading, math, and technology. Illustrations of schools that received architectural design awards and that model these concepts are provided in this section. A description of the school and construction data are also included.

The reader may find other concepts and meanings in the reform documents, determine other methodologies to deliver those concepts to students, and arrive at different design conclusions. There is no one design implication list that should be developed except that which is developed for the individual community. Above all, the reform movement is intended to help local educators better serve their community in a constantly changing world.

1997 CASH/AIACC
Excellence in Design Award

Award of Excellence
for Master Planning

Buchanan Educational Center

Garfield Elementary School
Alta Sierra Intermediate School
Floyd B. Buchanan High School

The Buchanan Educational Center is the recipient of the 1997 CASH/AIACC Excellence in Design award for its outstanding master planning. This educational center is a kindergarten-through-grade-twelve complex consisting of Garfield Elementary School (kindergarten through grade six), Alta Sierra Intermediate School (grades seven and eight), and Floyd B. Buchanan High School (grades nine through twelve).

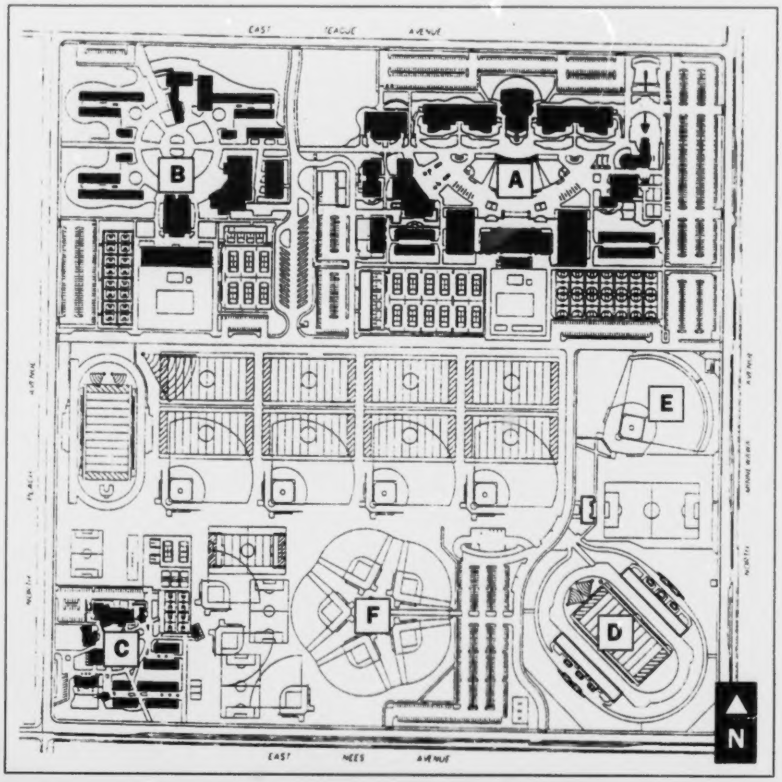
In addition to the three schools, this 160-acre educational park site provides a variety of athletic and recreational facilities: five softball diamonds, a football field and stadium, a baseball stadium, an all-weather track field, tennis courts, and a performing arts center. Before construction, this agricultural land with a gentle northeast- to southwest-trending slope was host to fruit orchards. No zoning restrictions existed because of the then-current agricultural use and the city master plan for low-density residential development.

Construction occurred in two phases. Phase one (site development) took three months and involved installing site utilities, establishing a drainage system, accomplishing earthwork fill, and rough grading. Phase two (construction) was spread over a 12-month period during which building construction took place along with site improvements.

Site Plan of Buchanan Educational Center

Legend

A. Floyd B. Buchanan High School
B. Alta Sierra Intermediate School
C. Garfield Elementary School
D. Football Stadium
E. Baseball Stadium
F. Five-Diamond Softball Complex



Aerial View of Buchanan Educational Center

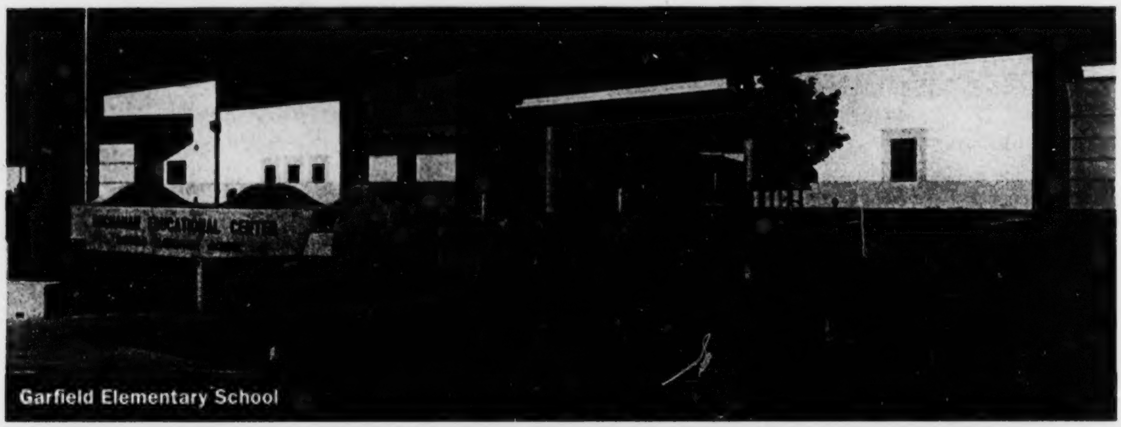
GARFIELD ELEMENTARY SCHOOL
ALTA SIERRA INTERMEDIATE SCHOOL
FLOYD B. BUCHANAN HIGH SCHOOL

Garfield Elementary School

Garfield Elementary School (Buchanan Educational Center), Clovis Unified School District, Clovis, California, is offered as an exemplary school designed and constructed as part of a three-campus educational complex housing kindergarten through grade twelve.

The school occupies approximately 17 acres of the 160-acre educational park and houses kindergarten through grade six. It is located on the more isolated and protected southwestern corner of the park and was the final development of the educational park. The school benefits from shared usage of the athletic fields and service facilities located to the north and east.

Construction Data on Garfield Elementary School	
Grades:	Kindergarten through six
Student Population:	740
Type of Project:	New construction
Funding Source:	State aid
Construction Completed:	July, 1994
Square Footage:	42,700 square feet (57.2 square feet per student)
Construction Cost:	$5,030,000.00 ($117.80 per square foot/ $6,824.32 per student)
Architect:	Edwin S. Darden Associates, Inc. Contact: Edwin S. Darden Jr., AIA (209) 222-7463
School District:	Clovis Unified School District Contact: Dr. Terry Bradley (209) 297-4000
Contractor:	Lewis Nelson & Sons
Structural Engineer:	J. Albert Paquette & Associates
Mechanical Engineer:	Lawrence-Nye-Becker Associates
Electrical Engineer:	EPS & Associates
Civil Engineer:	Blair, Church & Flynn
Landscape Architect:	Robert Boro Landscape Architect
Photographer:	H. S. Barsam Photography



Garfield Elementary School

Basic Site Design

The student population of 740 is housed as follows: two kindergarten classrooms, one special education classroom, and 20 standard classrooms. Other facilities include an administration building, media/library center, multipurpose dining facility, and a student snack bar. All facilities were constructed under the 42,700-square-footage allowance.

The buildings are single story, utilizing wood frame walls and roof construction. Exposed exterior canopies and structure are concrete, steel, and metal deck construction. This elementary school design uses color, scale, and geometric form in a manner that enhances student awareness of these most basic elements of the built environment and expresses the energy and vitality that the students of this age group have for learning.

Support Facilities

The site planning evolved as an extension of the school district's administrative system, academic program, site characteristics, and external influences. Security concerns are addressed by the campus design of the *administration building* location, which allows for visual supervision and monitoring of the entire campus. The *multipurpose dining facility, media/library center,* and *administration building* are also located around the amphitheater. The media/library center is accessible to the public for after-school use and on weekends and is adjacent to the administration building for shared use between administration and media staffs. The location of the administration building allows for ready access from visitor parking and serves as a central monitoring point for pedestrian traffic entering the campus.

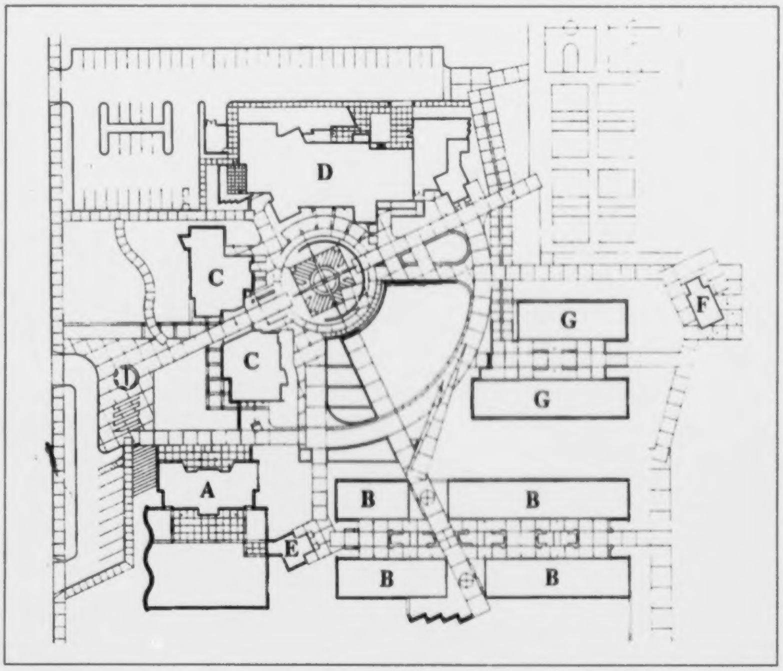
Academic Facilities

The classrooms are organized into clusters, with windows facing north and south for solar shielding from the hot summer climate of the San Joaquin Valley. Each cluster includes a partially covered central courtyard and is oriented around the amphitheater, which is the central focus of the campus. The amphitheater has been planned with student and community needs in mind. The raised platform doubles as a music classroom and stage. The original bell from the first Garfield School (constructed in 1883) has been incorporated for use during schoolwide rallies. There is direct access to the playfields behind the amphitheater.

The kindergarten classrooms incorporate the use of one-way glass between the staff area and the classrooms. This allows for observation of students while teachers are preparing teaching materials and parent-teacher observation of students during a parent-teacher conference. The kindergarten classroom building is visible from the administration building and is located adjacent to public parking to facilitate dropping off children.

Parking

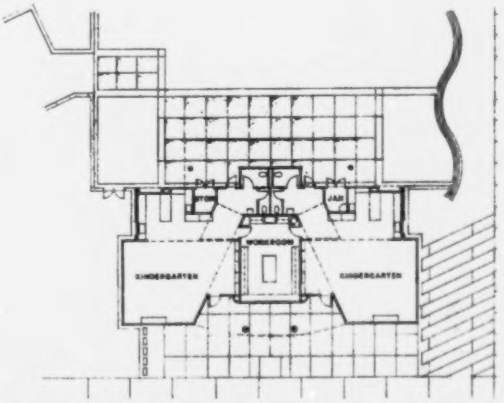
Convenient parking has been planned to minimize traffic congestion, provide ready access for visitors and students, and control parking for staff. Parking is also located near major play areas to facilitate community access to the recreation area. Bus parking serves daily student traffic as well as athletic and other curricular needs.



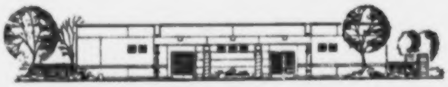
Site Plan for Garfield Elementary School

Legend

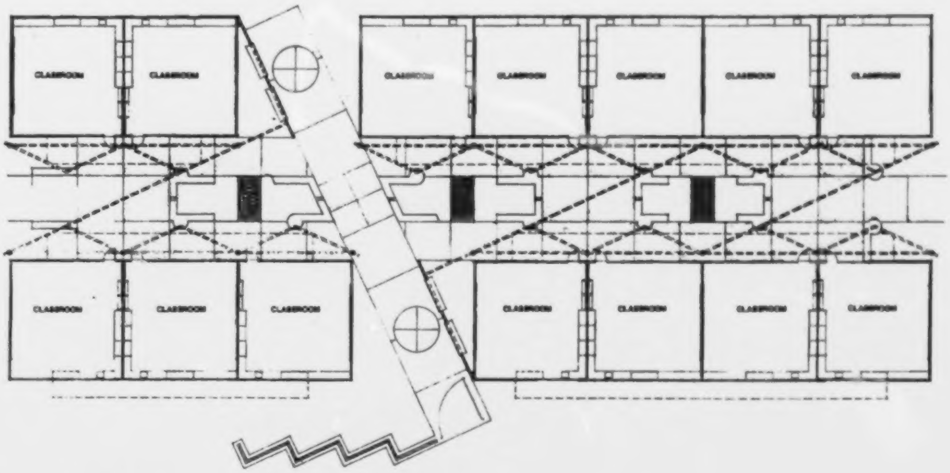
A. Kindergarten
B. Academic
C. Administrative/Media
D. Multipurpose
E. Toilets
F. Snack Bar/Toilet
G. Relocatables



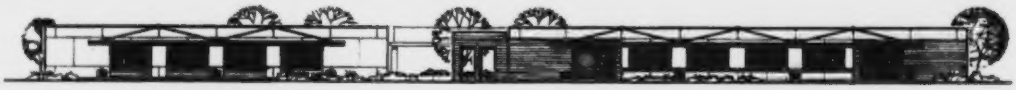
Kindergarten
Floor Plan



North Elevation



Academic
Floor Plan



South Elevation

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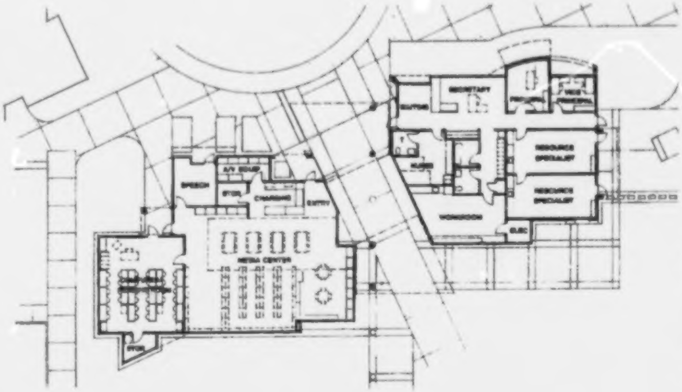
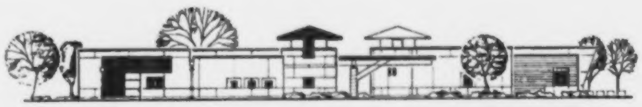
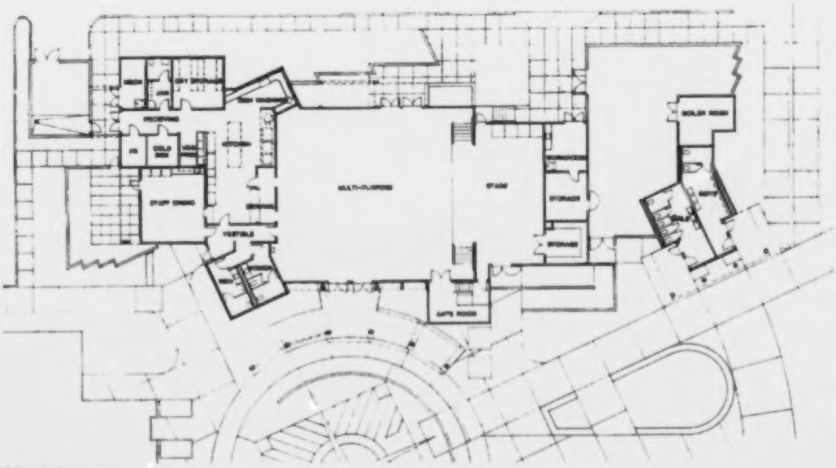


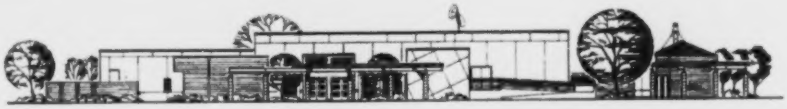
Administrative/Media
Floor Plan



East Elevation



Multipurpose
Floor Plan



South Elevation

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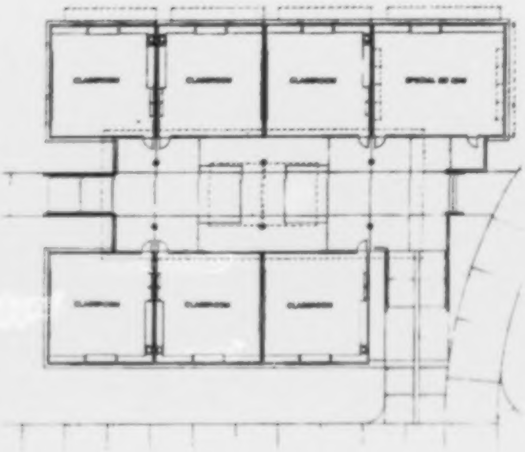
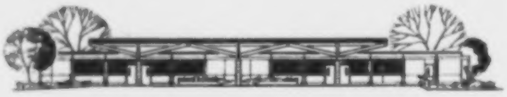
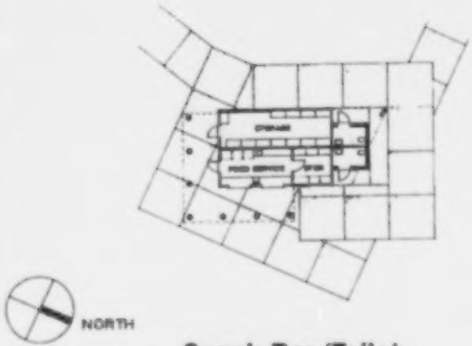


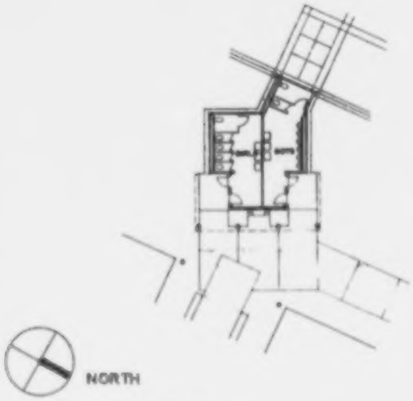
Relocatables
Floor Plan



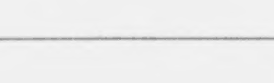
North Courtyard Elevation



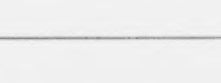
Snack Bar/Toilet
Floor Plan



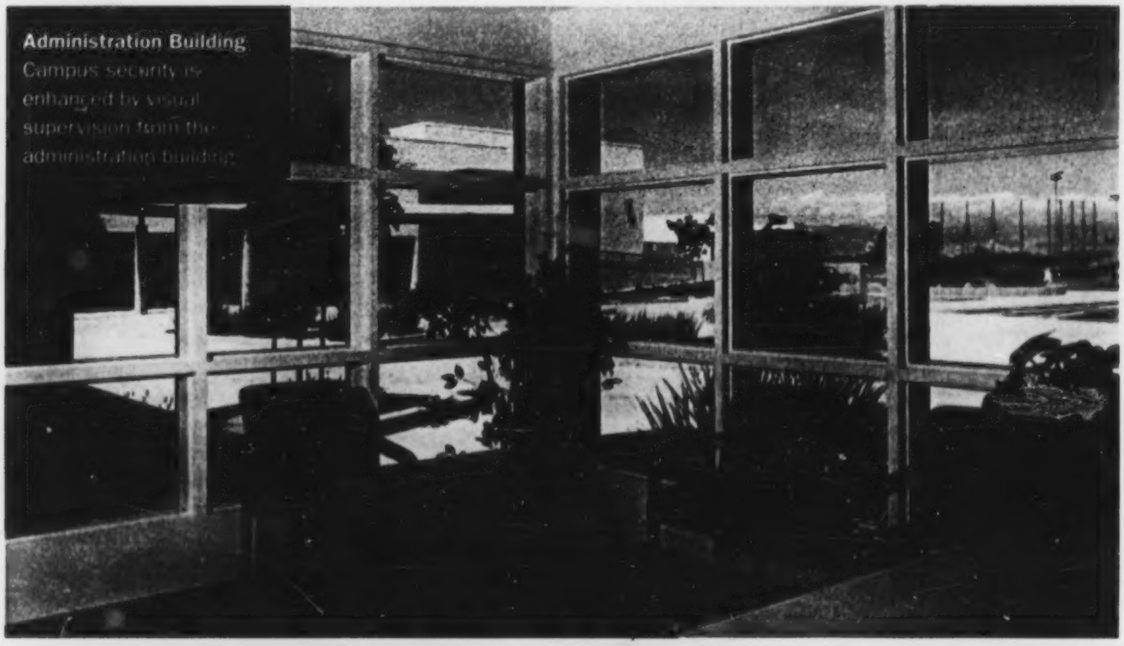
Toilets



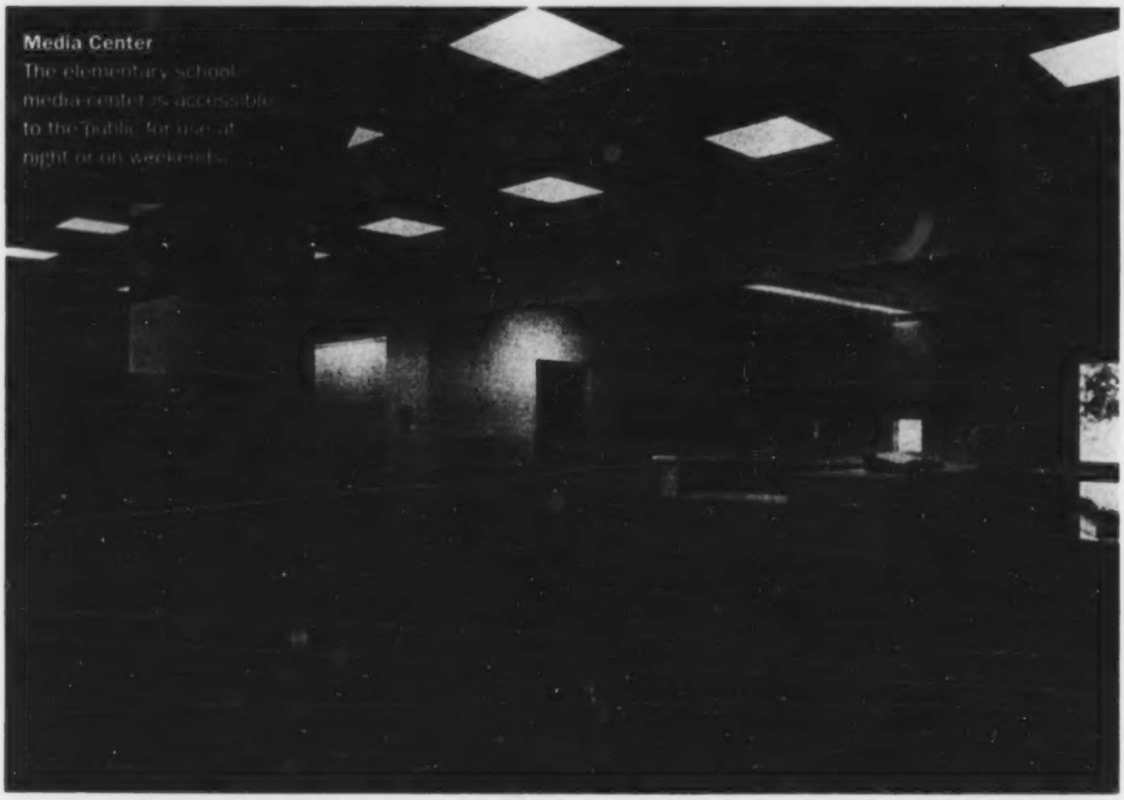
East Elevation



East Elevation



Administration Building
Campus security is enhanced by visual supervision from the administration building.



Media Center
The elementary school media center is accessible to the public for use at night or on weekends.

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Alta Sierra Intermediate School

Alta Sierra Intermediate School (Buchanan Educational Center), Clovis Unified School District, Clovis, California, is offered as an exemplary school designed and constructed as part of a three-campus (K–12) educational complex. It serves students in grades seven and eight.

The intermediate school occupies approximately 26 acres and was the first school to be constructed on the 160-acre educational park site. The planning for this intermediate school was influenced by the interrelationship of the various academic and support components in the park.

Construction Data on Alta Sierra Intermediate School

Grades:	Seven and eight
Student Population:	1,435
Type of Project:	New construction
Funding Source:	State aid
Construction Completed:	September, 1992
Square Footage:	113,426 square feet 79 square feet per student)
Construction Cost:	$18,953,000 ($167.00 per square foot/ $13,193 per student)
Architect:	Edwin S. Darden Associates, Inc. Contact: Edwin S. Darden Jr., AIA (209) 222-7463
School District:	Clovis Unified School District Contact: Dr. Terry Bradley (209) 297-4000
Contractor:	Swinerton & Walberg Co.
Structural Engineer:	J. Albert Paquette & Associates
Mechanical Engineer:	Lawrence-Nye-Becker Associates
Electrical Engineer:	EPS & Associates
Landscape Architect:	Robert Boro Landscape Architect
Photographer:	H. S. Barsam Photography

Basic Site Design

The campus' architectural form expresses the inherent elements of the plan. From the street the design relies primarily on form, mass, and composition to create a campus that can be readily understood and appreciated by a passing motorist. With the adjacent high school, there is nearly a quarter of a mile of campus structures. The interior core of the campus reveals more color and detail, and the buildings communicate on a scale more relative to pedestrian users. The core of the campus is framed by the surrounding buildings on campus. Its circular form is emphasized by the circular "carving" of the north overhang of the gym and the curved trellis at the entry to the multipurpose building; the concrete inserts in the sidewalk suggest columns surrounding the amphitheater. Administrative centers are easily identified by their unique architectural characteristics and lofty, glass-enclosed nodes of concrete, steel frame, and pre-finished metal.

Support Facilities

Site planning for the intermediate school was driven to a large degree by the district's administrative system and academic program. The school district's administrative structure dictates that *four administrative centers* provide administrative and logistical support to the campus. The centers are located around the campus core to facilitate administrator supervision and ongoing monitoring of student activities. Their locations also allow for direct supervision of student lockers and rest rooms (areas on campus that tend to be student gathering places). Special window glass in administrative buildings allow administrators to observe and monitor student activity without students being aware that they are being monitored.

Intermediate School
Administration/Reception

The *central amphitheater* is the visual and functional core of the campus. It provides an outdoor assembly area for the entire student body and a place for social interaction. An east-west axis links the intermediate school with the high school, where intermediate school students can take classes, use the library and career guidance centers, use the performing arts center and large lecture rooms, and take advantage of the cross-age tutoring program in which high school students provide tutoring for intermediate school students.

The *media/library center* combines the latest technology with proven design concepts. A computer center in the center of the library links students with libraries around the world. Students can even gain access to the library's resources at night through the phone lines from their homes. The computer center, book stacks, and carrels are positioned to allow easy supervision of students by the media center staff. North windows providing natural light to the center are augmented by indirect light from large "pucks" hung from the ceiling.

Athletic and *recreational facilities* are shared with the other schools in the educational park. The gymnasium is spanned by a unique three-dimensional truss system. The trusses are bowed two feet in the center to create drainage. The structural metal deck and sidewalks of the gym are perforated and the flutes are filled with insulation to provide sound attenuation. Concrete masonry walls support the truss system and provide a durable surface for sports activities.

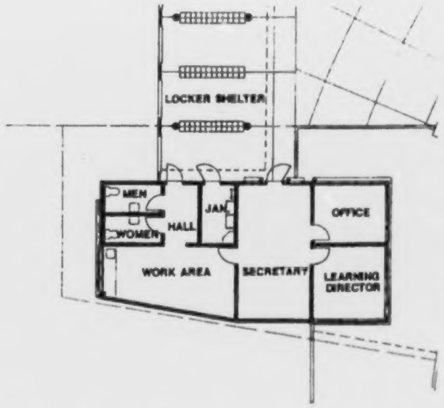
Maintenance facilities are centralized to serve the entire park as are some of the mechanical and electrical systems, a design which enables the school district to use state-of-the-art energy savings technology found in larger, more sophisticated systems.

Academic Facilities

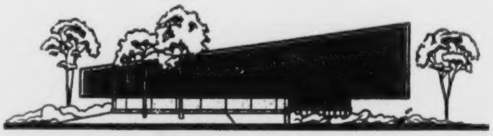
Classroom buildings are oriented with windows on the north and south walls for solar shielding from the hot summer climate of the San Joaquin Valley. Relocatable classrooms are treated simply and honestly. A canopy of steel frame with a metal deck creates cover for entry doors and a shaded landscaped concourse.

Parking

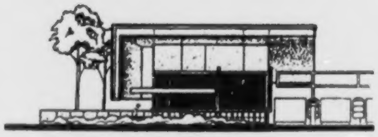
Parking facilities have been planned to minimize traffic congestion; provide ready access for visitors, staff, and students; and facilitate community access to the major play and campus recreation areas.



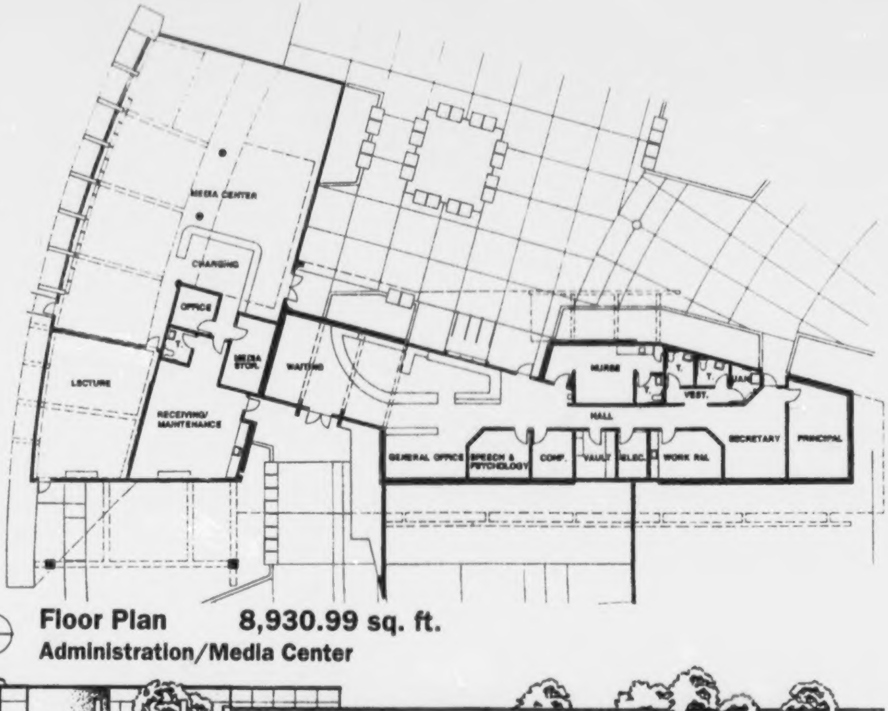
Floor Plan **1,436.59 sq. ft.**
Learning Director



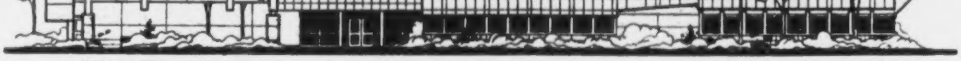
South Elevation



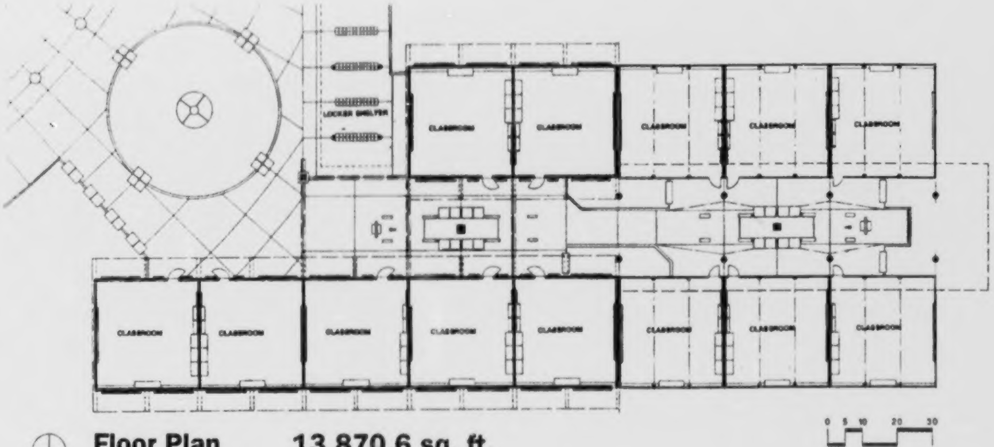
East Elevation



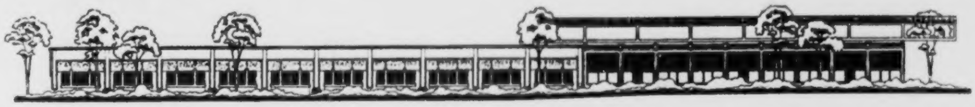
Floor Plan **8,930.99 sq. ft.**
Administration/Media Center



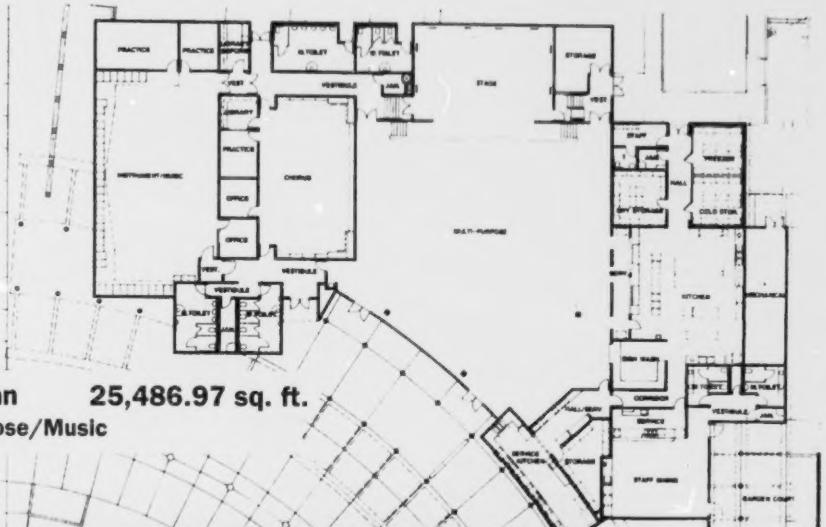
West Elevation



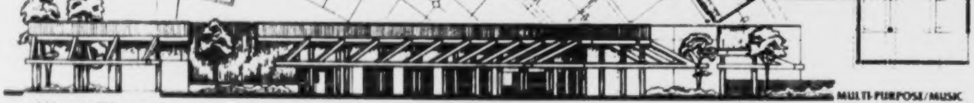
Floor Plan **13,870.6 sq. ft.**
Academic Unit



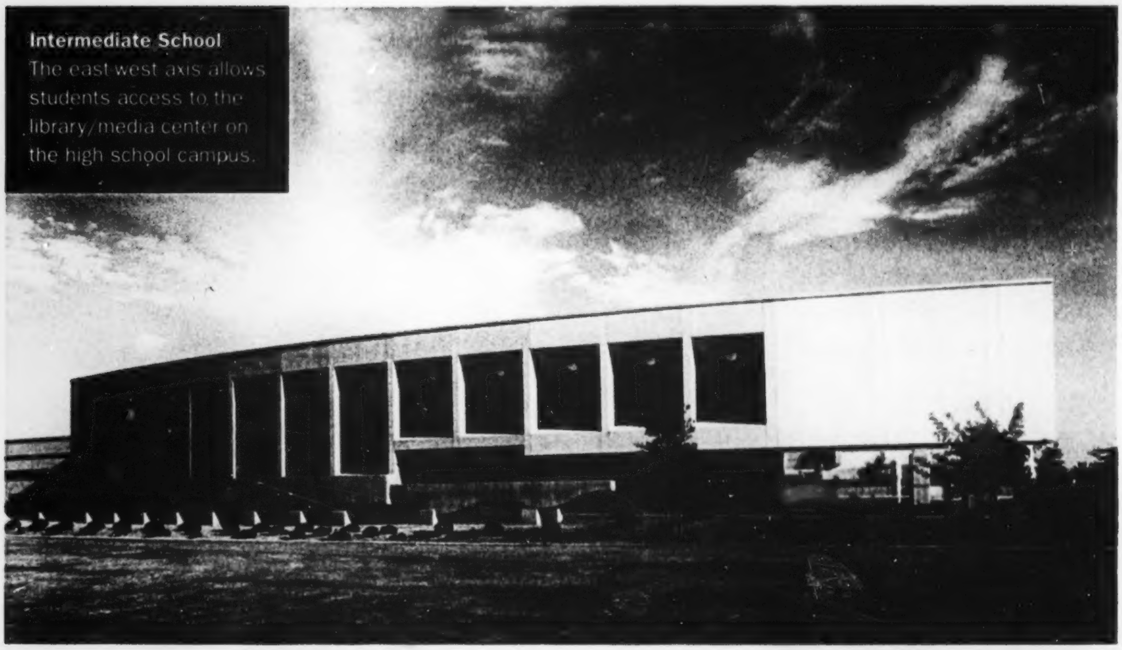
North Elevation



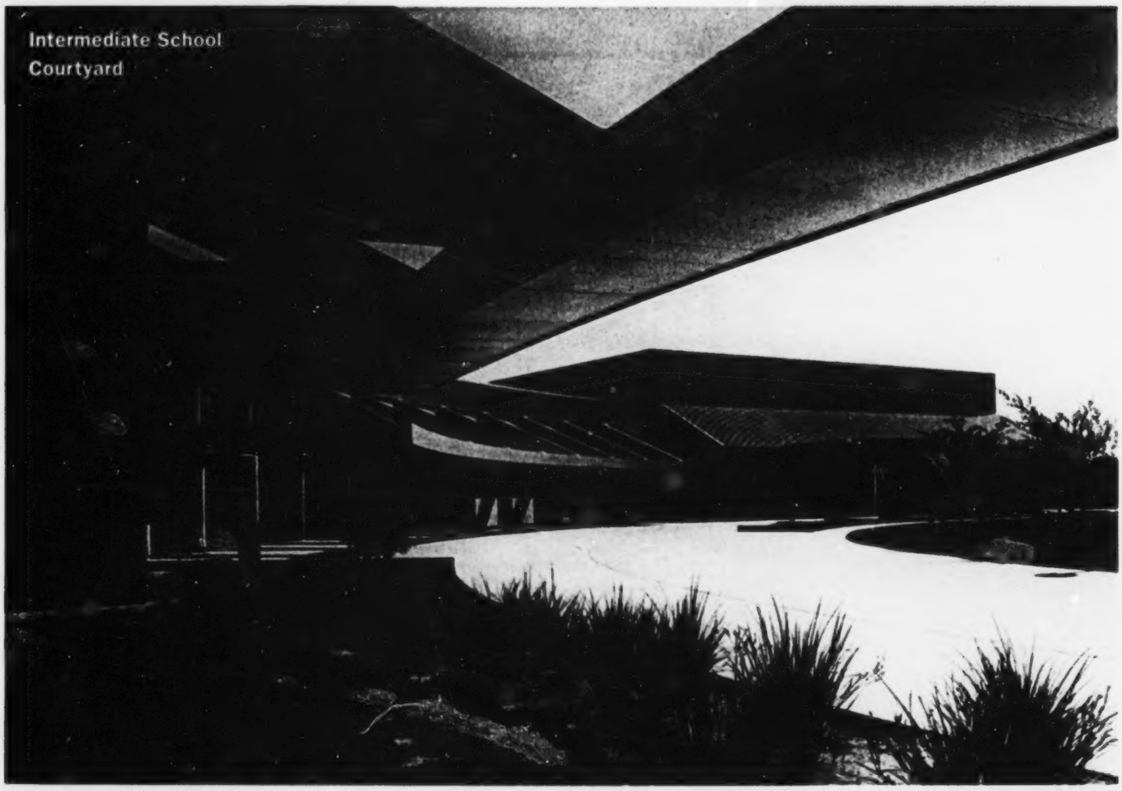
Floor Plan **25,486.97 sq. ft.**
Multipurpose/Music



West Elevation



Intermediate School
The east west axis allows students access to the library/media center on the high school campus.



Intermediate School Courtyard

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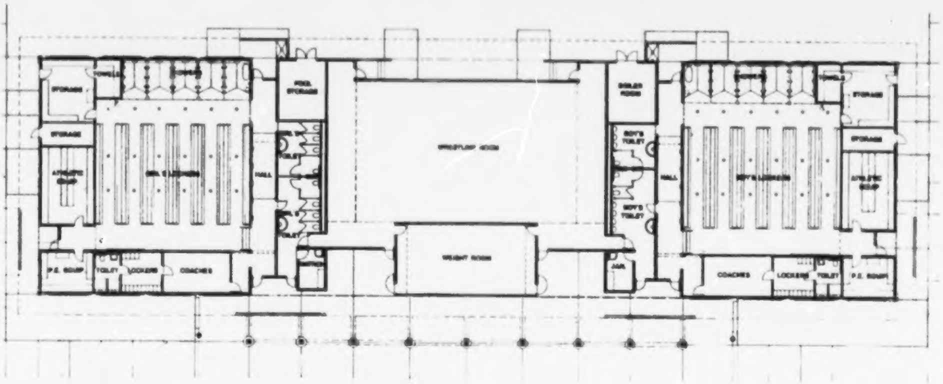
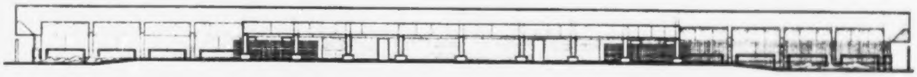
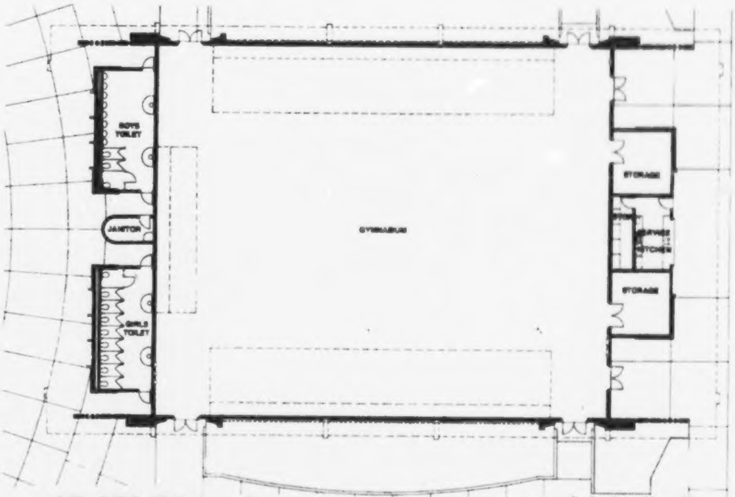


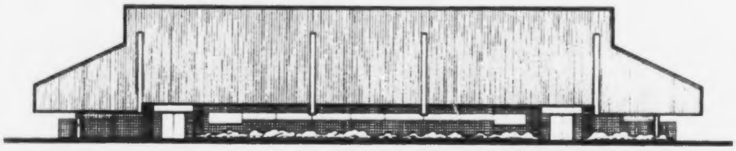
Floor Plan **18,847.22 sq. ft.**
Locker/Shower



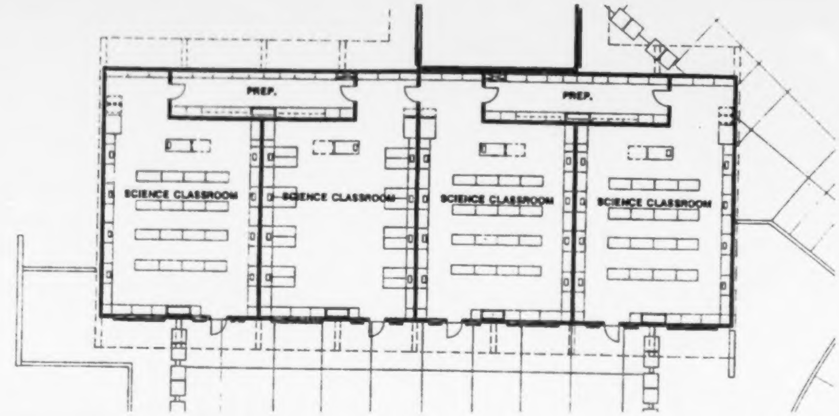
North Elevation



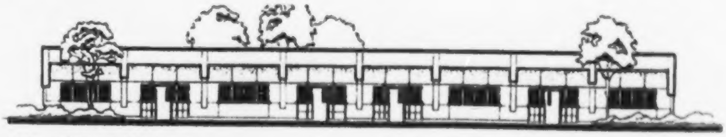
Floor Plan **15,476.71 sq. ft.**
Gymnasium



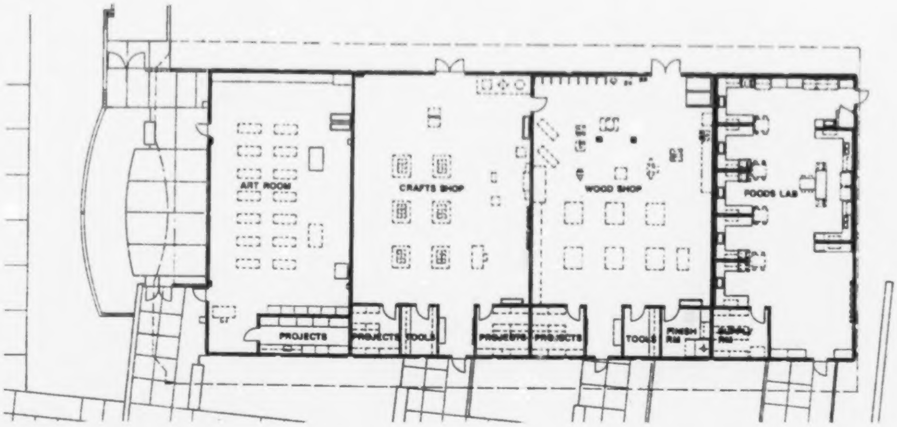
West Elevation



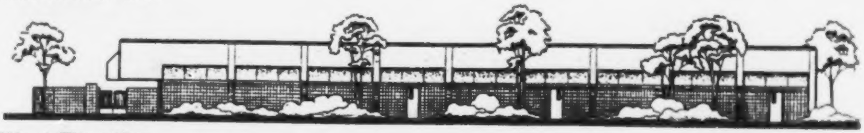
Floor Plan **6,539.85 sq. ft.**
Science



West Elevation



Floor Plan **9,613.86 sq. ft.**
Vocational Arts



West Elevation

Floyd B. Buchanan High School

Floyd B. Buchanan High School (Buchanan Educational Center), Clovis Unified School District, Clovis, California, is offered as an exemplary school designed and constructed as part of a three-campus (K–12) educational complex. It serves students in grades nine through twelve.

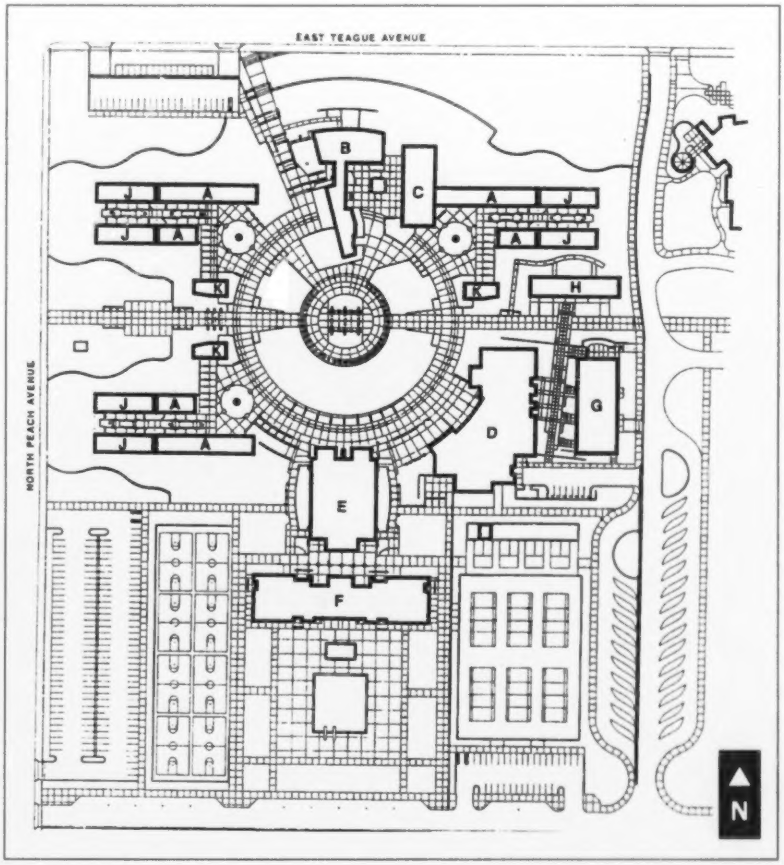
The high school occupies approximately 47 acres of the 160-acre educational park at the southeastern corner of Teague and Minnewawa Avenues in Fresno, California, and was the second education facility constructed on the park site.

Construction Data on Floyd B. Buchanan High School

Grades:	Nine through twelve
Student Population:	2,758
Type of Project:	New construction
Funding Source:	State aid
Construction Completed:	December, 1993
Square Footage:	290,497 (105.4 square feet per student)
Construction Cost:	$32,347,076 ($111.35 per square feet/ $11,728 per student)
Architect:	Edwin S. Darden Associates, Inc. Contact: Edwin S. Darden, Jr., AIA (209) 222-7463
School District:	Clovis Unified School District Contact: Dr. Terry Bradley (209) 297-4000
Contractor:	Lewis Nelson & Sons
Structural Engineer:	J. Albert Paquette & Associates
Mechanical Engineer:	Lawrence-Nye-Becker Associates
Electrical Engineer:	EPS & Associates
Landscape Architect:	Robert Boro Landscape Architect
Photographer.	H. S. Barsam Photography

Basic Site Design

Form, mass, and composition are important architectural design features. A street view reveals one-quarter mile of high school and middle school buildings harmoniously blending together. The core of the campus reveals more color and detail, and the buildings communicate on a scale more relative to the students. Additionally, the park site design facilitates sharing of athletic and service facilities with both the intermediate and elementary schools. The site planning for the high school promotes successful concepts that have been evolving in the district. These concepts evolved as a logical extension of the school district's administrative system, the academic program, site characteristics, and external influences. Additionally, planning was influenced by the interrelationship of the various components in the park. A paramount element in the site planning is decentralized administrative centers.



Site Plan for Floyd B. Buchanan High School

Legend

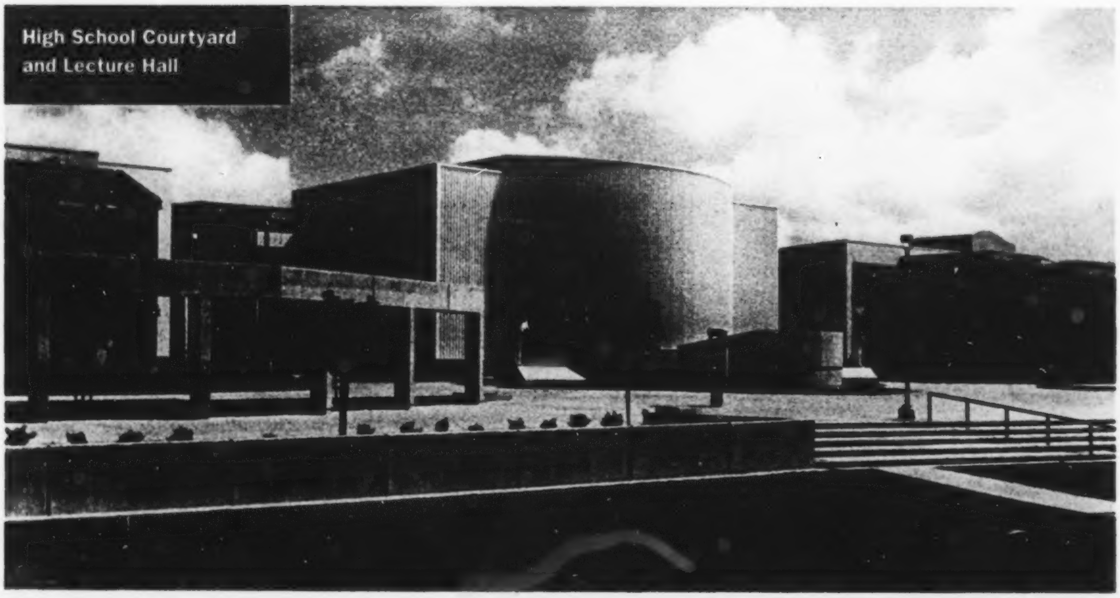
A. Academic Hall
B. Administration
C. Science
D. Multipurpose/Music
E. Gymnasium
F. Locker Shower
G. Vocational Arts
H. Special Education
J. Relocatables
K. Learning Director

Support Facilities

Five administrative centers provide administrative and logistical support to the 2,800-student campus. Four of the centers house learning directors, counselors, and faculty. These administrative centers facilitate groups of academic classrooms, providing full administrative and logistical support for students and staff at its center. In addition, the administrative center office locations relate to their areas of responsibilities and oversee the central core of the campus. The school administration includes the principal, vice-principal, attendance staff, finance staff, nurse, speech therapist, psychologist, other clerical support, and public lobby. The principal's office is located with a view of the entire academic complex, thus retaining the "feel" of the student body mood and view of campus activity. The office of the vice-principal is located for visual monitoring of the front of the campus and student parking lot. All of the centers are located with easy access to the campus core for maximum supervision.

The *central amphitheater* and *student commons* are the visual and functional core of the campus. They provide an outdoor gathering place for the total student body ,when desired. Student lockers, rest rooms, and other student gathering areas are located around the student commons and can be easily supervised by one of the five administrative centers.

Athletic and *recreational facilities* comprise two gymnasiums, a pool complex, a baseball stadium, football stadium, a five-diamond softball complex, and full complement of tennis courts, hard courts, and practice fields. This full range of athletic facilities makes Buchanan the hub of community activities.


High School Courtyard and Lecture Hall

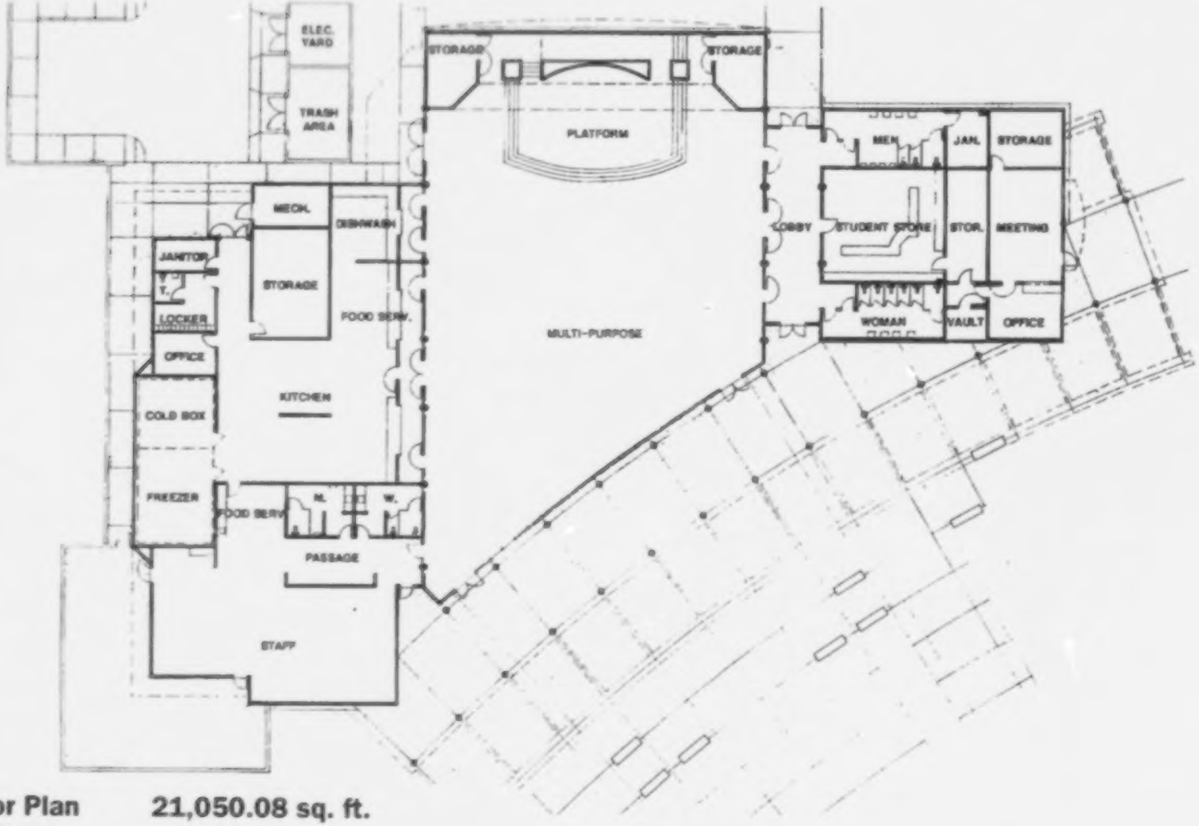
Maintenance facilities are centralized to serve the entire park, as are some of the mechanical and electrical systems, which enables the district to use state-of-the-art energy savings technology found in larger, more sophisticated systems.

Academic Facilities

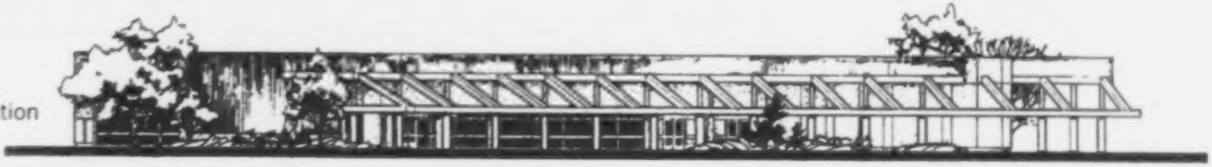
Classroom buildings are oriented with windows on the north and south walls for solar shielding from the hot summer climate of the San Joaquin Valley. An east-west axis links the high school with the intermediate school, allowing intermediate school students to take advantage of facilities and services available at the high school, such as advanced classes, library and career guidance centers, performing arts center, and large lecture rooms. This layout also facilitates the use of a cross-age tutoring program in which high school students provide tutoring for intermediate school students.

Parking

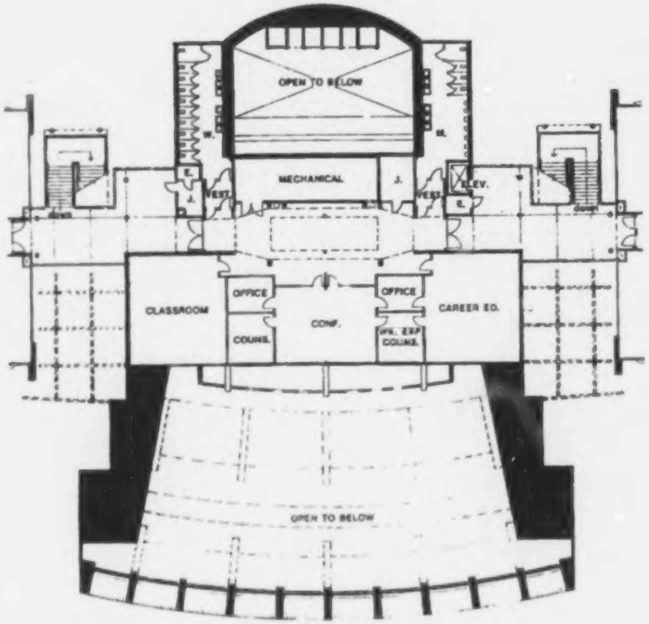
Parking facilities have been planned to minimize traffic congestion; provide ready access for visitors, staff, and students; and facilitate community access to the major play and campus recreation areas.



Floor Plan **21,050.08 sq. ft.**
Multipurpose

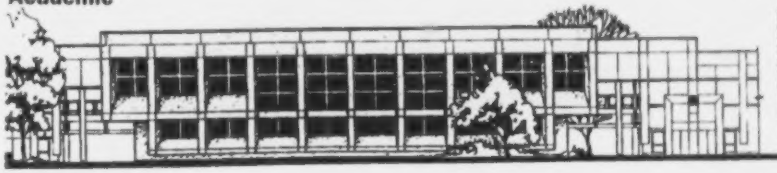


East Elevation

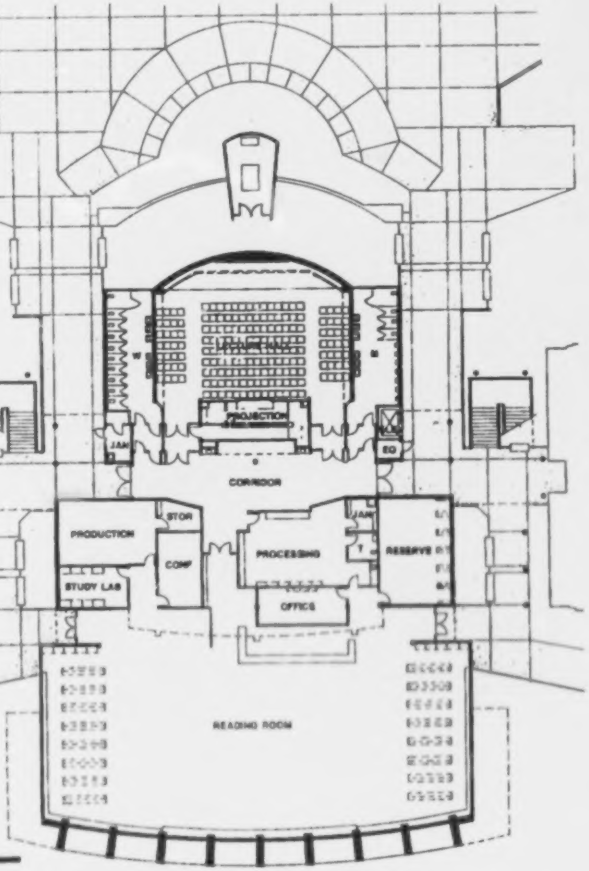


Upper Floor **6,886.53 sq. ft.**

Academic

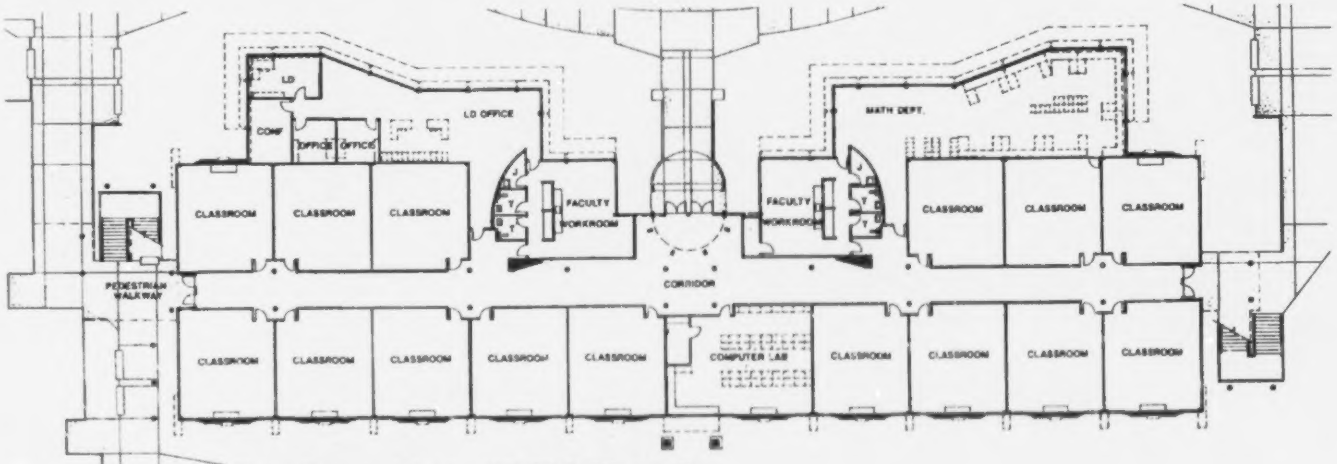


North Elevation

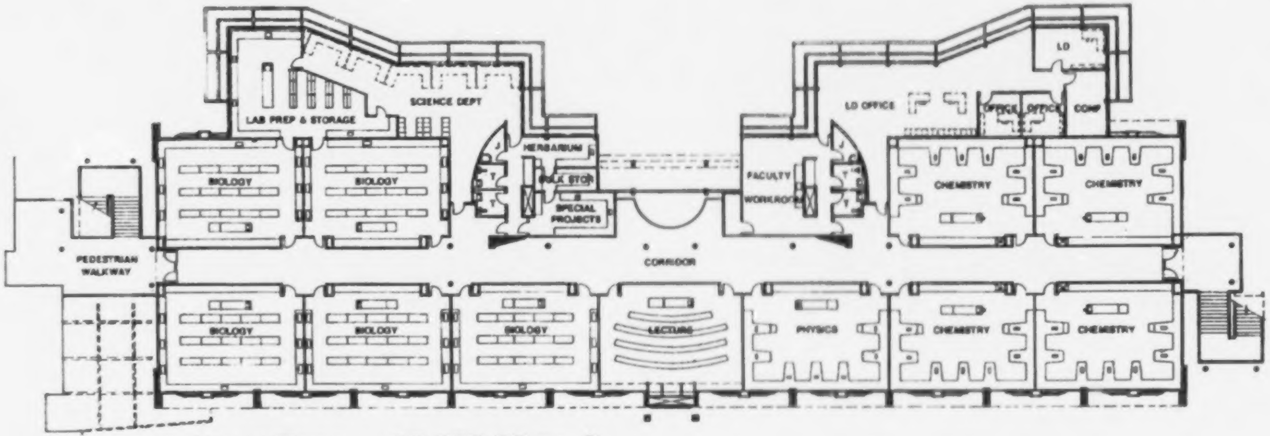


Floor Plan—Center **16,521.81 sq. ft.**

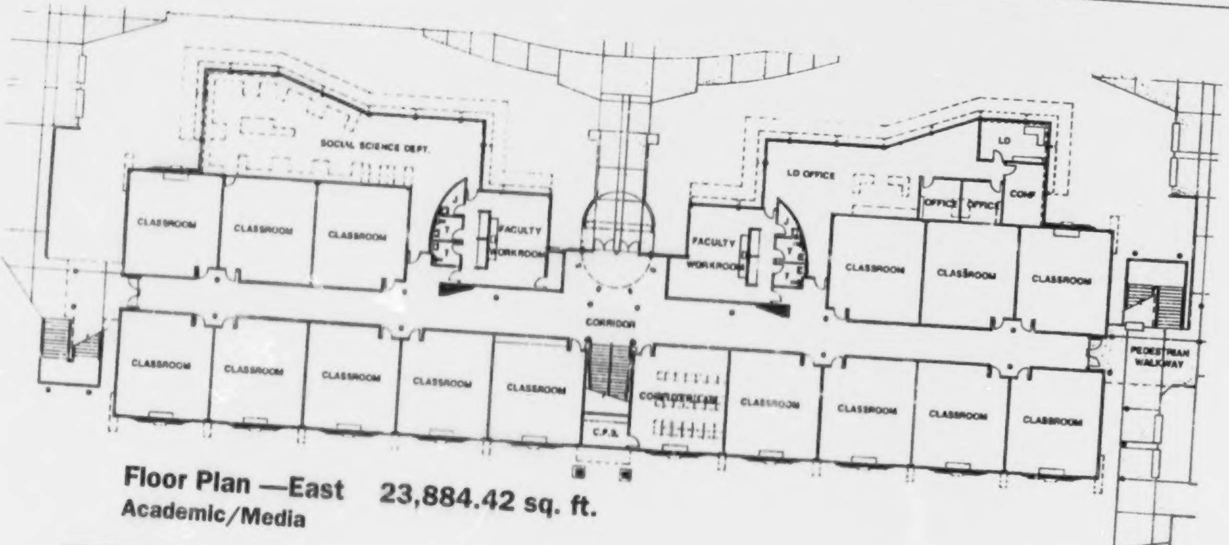
Academic/Media



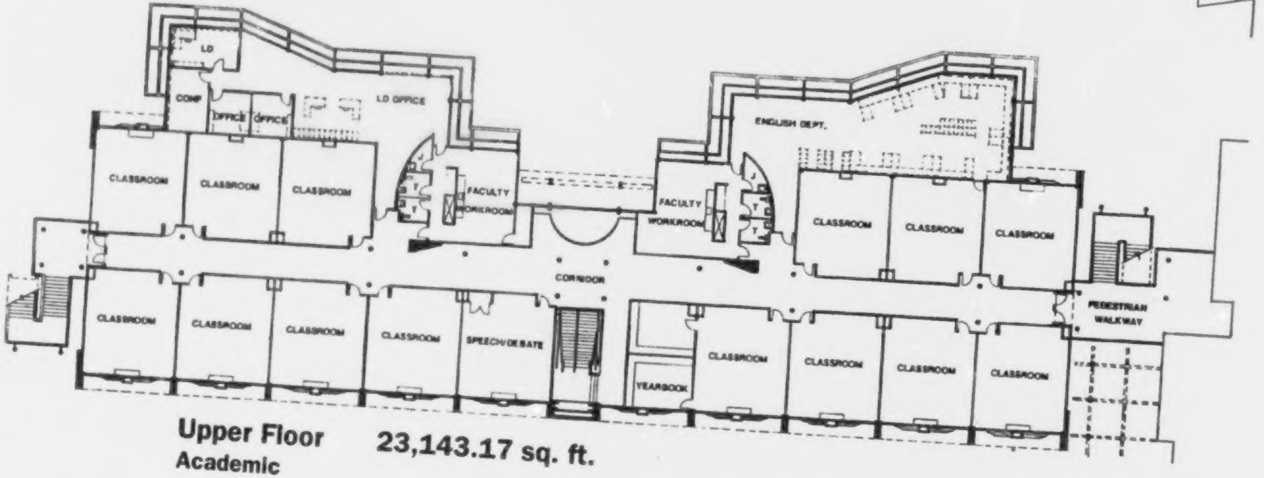
Floor Plan —West 23,869.36 sq. ft.
Academic/Media



Upper Floor 23,639.59 sq. ft.
Academic



Floor Plan —East 23,884.42 sq. ft.
Academic/Media



Upper Floor 23,143.17 sq. ft.
Academic

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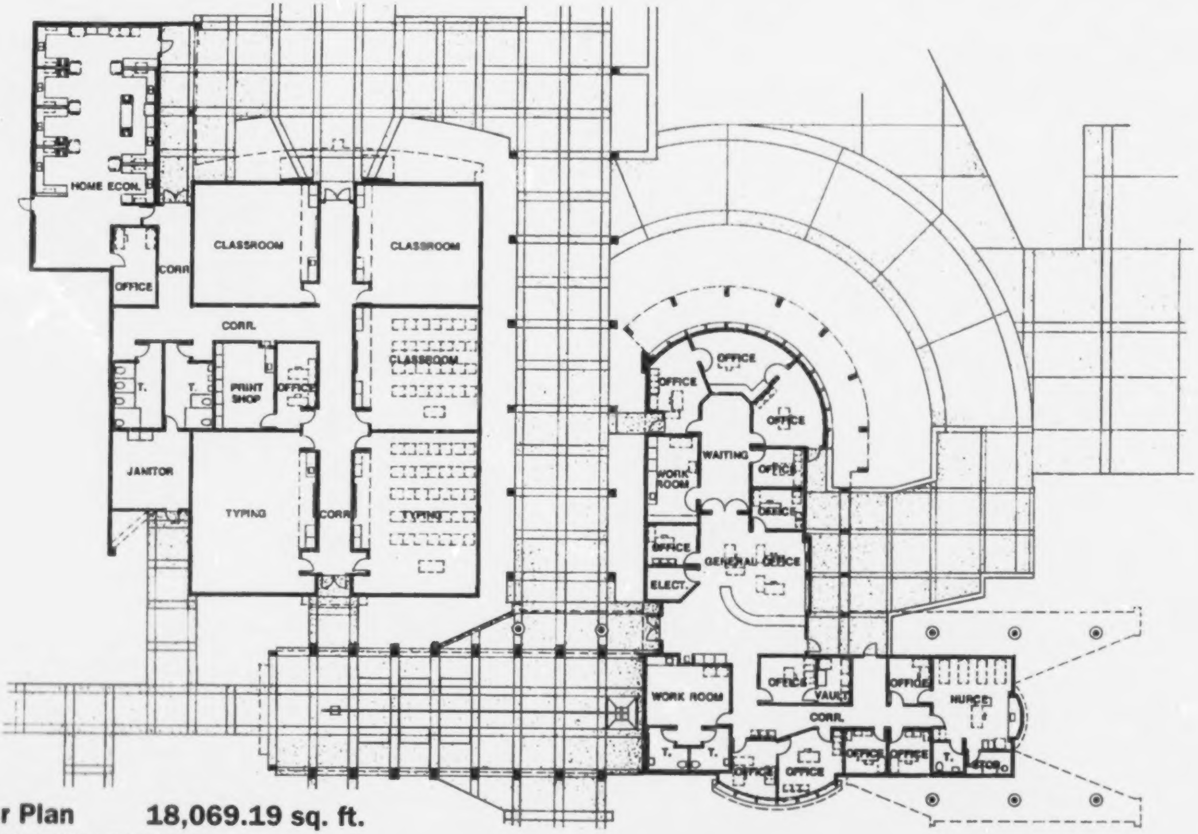
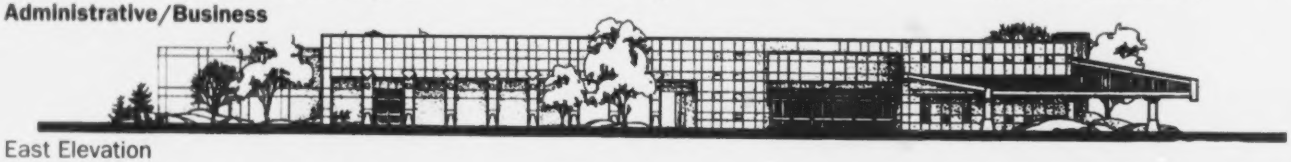


Floor Plan **18,069.19 sq. ft.**
Administrative/Business



East Elevation

Concepts Selected by the Elementary School Task Force from

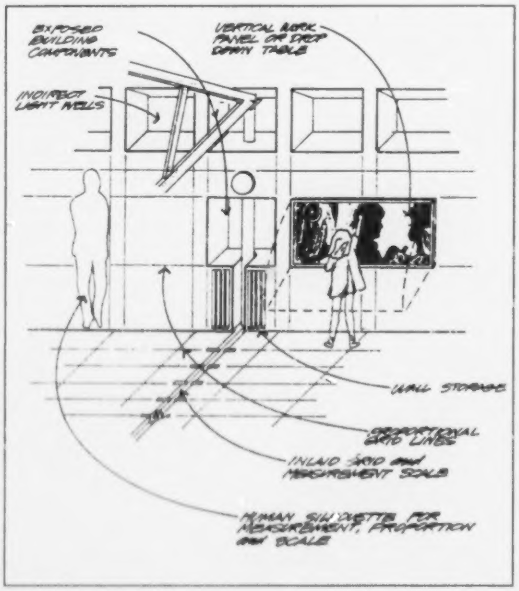
Here They Come: Ready or Not! and *It's Elementary!*

Educational research indicates that students' early school experiences affect them for the remainder of their lives. Self-esteem, the sense of wonder, and the ability to plan and even think critically and analytically—all hinge on those early education and social experiences. Furthermore, linguistically, ethnically, economically, and socially, California's preschool and elementary school-age population is different from what it was just 10 years ago. Preschool and elementary educational reform is a response to the importance of those early school years as well as a response to a changing and diverse school population.

Educational reform addresses the changing population shifts and trends and the rapid changes in research on how students learn as well as what they are learning. Moreover, it has significant implications for the design of twenty-first-century schools. To accommodate the forecasted changes, school facility designers propose that twenty-first-century school facilities and classrooms take on new and different looks and provide many more spaces for manipulative activities and increased accessibility to the school community as well as become technologically up-to-date.

A major component of educational reform is class size reduction in kindergarten and grades one through three. The implementation of class size reduction legislation alters instructional program delivery and requires careful consideration of instructional space. A class with a reduced teacher-student ratio does not mean a smaller classroom. Adequate instructional program delivery requires a classroom consisting of adequate square footage. Ideally, instructional environments should be designed with consideration given to individual instructional program

How children learn can be reflected in the design of a facility. Obvious structural elements and building systems can be used as teaching tools. To help develop the intuition necessary to understand the physical world, facility aesthetics and function should be easy to understand.


EXPOSED BUILDING COMPONENTS
VERTICAL WORK PANEL OR DROP DOWN TABLE
INDIRECT LIGHT WELLS
WALL STORAGE
PROPORTIONAL GRID LINES
INLAID GRID AND MEASUREMENT SCALE
HUMAN SILHOUETTE FOR MEASUREMENT, PROPORTION AND SCALE

WOLFF, LANG, CHRISTOPHER ARCHITECTS

offerings; large- and small-group instruction; newer instructional strategies, such as increasing technology instruction; opportunities for community partnerships; spaces for circulation, cabinets, case work, wet areas, and teacher work areas; storage spaces; and other classroom support services. Such needs do not change because of class size reduction. However, reducing classroom square footage because of reduced teacher-student ratio restricts instructional flexibility, defeats the purpose, and greatly reduces the benefits of class size reduction.

From its review of *Here They Come: Ready or Not!* and *It's Elementary*, the task force identified 11 basic concepts. The first two concepts were extracted from *Here They Come: Ready or Not!* The others were derived from both documents.

1. Creating playgrounds as learning landscapes
2. Creating indoor learning spaces
3. Creating an environment to support a meaning-based, integrated curriculum
4. Establishing a supportive environment for performance-based accountability and assessment
5. Preparing students for the world of work and future life choices
6. Providing effective student support and reducing the dropout rate
7. Establishing an environment of professionalism
8. Making instructional and organizational changes to allow students to reach higher performance levels
9. Initiating effective parent in-service programs and family/community involvement
10. Expanding the use of technology
11. Creating a school climate conducive to learning

"The architecture and design of schools and their surrounding areas should be designed in such a way that they become learning tools and learning landscapes."

Anne P. Taylor, School of Architecture and Planning, University of New Mexico, Albuquerque.

Concept 1 Creating Playgrounds as Learning Landscapes

"The learning environment needs to provide stability and familiarity; this is part of the function of routine classroom behaviors and procedures. At the same time, provision must be made to satisfy our hunger for novelty, discovery, and challenge."

Renate N. Caine and Geoffrey Caine, *Making Connections: Teaching and the Human Brain*. Quoted in *It's Elementary*.

Outdoor spaces, particularly for prekindergarten children, can provide a variety of learning zones that support such varied and crucial activities as nature study, eco-literacy, socialization, and the practice of gross motor skills. The design should include both active and passive spaces. A learning rationale should undergird the outdoor landscape design, and safety considerations should govern the design as well.

Methodologies

The methodologies used to implement this concept should be based on the use of outdoor spaces for play and learning. Safety and stimulation should be of paramount concern.

Design Implications to Consider

- Areas with both shade and sun
- A tricycle path used as a nature trail
- A garden, orchard, shrubs, trees, and running water and fountains
- Soft surfaces for toddlers not adept at walking
- Some small inclines, such as knolls or inclined planes
- Benches and seating for children and caregivers
- Sand play and climbing areas

Concept 2 Creating Indoor Learning Spaces

Schools and classrooms provide a setting where both academic and social learning occur for students. Effective indoor learning spaces are clean, well lighted, safe, warm, pleasant, cozy, and well maintained. Color stimulates intellect and interest and also induces calmness. It promotes flexible use of space. Therefore, the indoor learning space should be designed to reflect subdued colors as well as colorful spaces with soft finishes. Facility, playground, and overall site design can encourage and allow for holistic and integrated instruction and function as learning tools. Exposed ductwork and structural beams, playgrounds, and places for plant growth can be used to reinforce academic skills and provide opportunities for nature study, eco-literacy, socialization, and the practice of gross motor skills. Additionally, they stimulate aesthetic and visual awareness. Classroom organization should consider and foster the various student learning styles and early technological literacy.

Methodologies

The methodology used to implement this concept includes recognizing children as holistic learners and recognizing the importance of perception and experience as learning tools.

Learning areas should be soothing and comforting. Windows and skylights provide essential lighting, while window seats provide a connection to the outside world. Children need supervised, private, and comfortable spaces for storytelling, large- and small-group activities, and development and reinforcement of basic skills.

Design Implications to Consider

- Welcoming entryway, variety of spaces, and flexible connections between spaces
- Cubbies or boxes
- An open zone for development of large-muscle and gross motor skills
- Designated instructional areas
- Numerous usable, changeable display areas and mini-museums
- Open, interactive areas and places
- Ample but not harsh lighting
- Natural lighting
- A food preparation area, teachers' work and storage room, and nurse's room

Concept 3

Creating an Environment to Support a Meaning-based, Integrated Curriculum

"A model school might not necessarily be a new school; it could be an existing school that has been modified and retrofit to meet certain needs."

Henry Heydt, Ed.D., Assistant Director, School Facilities Planning Division, California Department of Education. Quoted in "Building the Model School," in *American School & University*, October, 1995.

A rich, meaning-based, integrated curriculum that stimulates critical and analytical thinking is the centerpiece of instruction. It addresses the various learning modalities; challenges students on a variety of learning levels; engages students in the multiple intelligences; and requires a wide variety of developmentally appropriate instructional strategies using program, technological, and human resources.

Methodologies

Implementing a meaning-based, integrated curriculum can best be achieved through instructional methodologies that emphasize student-centered learning experiences, manipulatives, opportunities for cross-age learning experiences, increased adult-pupil ratios (instructional aides/community volunteers), access to and use of indoor and outdoor spaces, thematic learning, integrated technology, and emphasis on interdisciplinary and cooperative teaching and learning.

Design Implications to Consider

- Convenient storage and display spaces for projects in progress, including electronic storage, flat storage, cubes and cubbies, wall displays, and retractable or portable stages
- Movable and adaptable acoustical separators
- Specialized work areas, mini-laboratories, and studios with sinks and work tables
- Storage for musical instruments and such specialized equipment as animal cages
- Large- and small-group areas
- Computers with access to the Internet and telephone and fax links
- Indoor and outdoor spaces integrated through use of windows, sliding glass doors, and roll-up doors
- Areas for growing plants and keeping animals

Concept 4

Establishing a Supportive Environment for Performance-based Accountability and Assessment

"One statewide study reported at the conference showed a direct correlation between achievement and behavior of the students and the condition of the built environment in which they are housed."

The Council of Educational Facility Planners, International, 72nd Annual Conference, Dallas, Texas, September 16-19, 1995.

In addition to the use of diagnostic standardized instruments, accountability and assessment can be partially measured through an authentic assessment of student portfolios, student writing samples, videotapes reflecting student learning involvement and performances, and displays and exhibitions of student work. Additionally, students demonstrate learning by applying knowledge to real-life problems.

A student-centered learning environment provides independent and self-directed learning spaces that are linked to the curriculum. Such spaces promote an environment that supports teacher planning, a variety of teaching strategies, and different types of assessment.

Methodologies

Creating a learning environment that promotes accountability and assessment requires a setting wherein students become responsible for reaching standards set for grade-level achievement. In so doing, students can plan and present their work. Such presentations may be done individually and collectively, formally or informally, to both large and small audiences, allowing evaluation by peers, staff, and community members. Individual student achievement of the standards is the key.

Active participation and real-life experiences, including hands-on learning, require a variety of work spaces and storage areas. Performance areas include outdoor spaces, small- and large-group spaces, and practice rooms, as well as planning areas for students and staff. Ideally, there are personalized, separate work spaces for students, with ample flexible space allowing students to work individually or collaboratively with others at work stations that have movable furniture and equipment.

Design Implications to Consider

- Variety of work spaces and storage areas
- Planning areas for students and staff and a studio-type space with large rolling tables
- Performance areas comprising outdoor spaces, small- and large-group spaces, and practice rooms
- Storage for student projects and portfolios in drawers, closets, computers, and lockers
- A movable or retractable stage, space for multimedia displays
- Personalized, separate work spaces for students; flexible spaces allowing students to work individually or collaboratively

Concept 5

Preparing Students for the World of Work and Future Life Choices

"Planning for renovation has the potential to go well beyond the physical improvements to a school site. It is the hope of the committee that the process fosters deepened community involvement with its schools."

Planning Process for School Site Renovation to Ensure Equity and Community Input.

Creating an environment that promotes an awareness and understanding of future life choices means that students will have access to extensive information through use of electronic information processing and retrieval systems and networks. It is envisioned that networks will link schools to homes, to other schools, and to other resources locally, regionally, and nationally that can promote a broad awareness of future life choices. Electronic field trips and interactive media and displays will stimulate interest as students explore various subjects and professions throughout the world. As technology links schools and homes, there is opportunity for encouragement of community use of facilities.

Methodologies

The methodology used to implement this concept includes creating opportunities for making future life choices. In a highly technological environment, access to distance learning with the outside world and integration of technology are imperative. Traditional field trips and community presentations will be particularly meaningful. To introduce and explore various professions to students, teachers can build partnerships with business, the community, and other schools; use student internships; establish opportunities for job shadowing; create service-learning partnerships; introduce interactive media and displays; and use resources of community members, mentors, and volunteers. Before- and after-school programs can provide added support to the concept and to student learning.

Design Implications to Consider

- A community service center and interactive bulletin board
- Room and spaces for adult alternative and continuing education, before- and after-school programs, and child care
- Building arrangement convenient to community parking and transportation systems
- Raceways and ducts designed to accommodate future changes in technology, with a central control area for multimedia presentations
- Instructional spaces to encourage support and incorporation of business partnerships and presentations by community volunteers

Concept 6

Providing Effective Student Support and Reducing the Dropout Rate

"When you walk into a school, you may get a global impression of the school's distinctive tone or character. What cues lead to that impression? The walls and their decorations, the floors and the way they are polished, the demeanor of students and staff walking through the halls, the nature of the instruction that takes place in classrooms, the relationships between staff and administrators? Behind or beneath the cues . . . lies a shared set of organizing principles called culture."

F. Erickson, "Conceptions of School Culture: An Overview," *Educational Administration Quarterly*, November, 1987.

In the current educational setting, schools address many social and family issues and collaborate with community and government groups. Depending on community size, the school campus is challenged to become a community center. Programs, practices, and facilities that promote healthy social interaction; raise student self-esteem; incorporate local traditions, culture, and history; and encourage collaboration between community and school personnel are essential to this concept.

School design must be aesthetically pleasing and safe to address the need for providing a caring and nurturing environment for students considered educationally at risk. There should be meeting spaces in a common area adequate for housing different agencies that can provide services to students and families most in need.

Methodologies

Implementation of this concept requires provisions for coordinated social, educational, and health services to students and families; educational opportunities and activities to promote parental involvement; and counseling and training in conflict management and violence prevention for students, staff, and parents. Programs in recreation, fine arts, and community pride for families and youths will be an added support. Cross-age community tutoring by students and other mentors serves to raise student achievement levels and bonds the school and community.

Design Implications to Consider

- Building design that creates a sense of enclosure and security
- Accessible and well-lighted playground for before- and after-hours use
- Interior and exterior informal gathering areas with seating of varying sizes
- Community meeting spaces and work areas
- Security fencing that is unobtrusive and does not project the image of a fortress
- On-campus cafeteria
- Small-group meeting areas with acoustical privacy and outside telephone lines
- A welcoming or resource center, such as a parent volunteer space in a central location separate from the teachers lounge
- Spaces for coordinated on-site social services, Healthy Start programs, or a multiservice center to serve student-family needs

Concept 7

Establishing an Environment of Professionalism for Teachers and Staff

Teacher and staff professionalism can be nurtured and enhanced by providing flexible, personal work spaces that can be used for collaboration, planning, and discussion. An in-service center, with multimedia access and professional library, should be available for all staff use.

Methodologies

The methodologies used to implement this concept include encouraging staff involvement in decisions and providing leadership opportunities, such as site-based management, site councils, committees, task forces, training, and in-service workshops. Teachers select curriculum materials, plan together within and across grades, and share ideas and strategies.

Teachers should be encouraged to interact with other educators and arrange cooperative ventures with higher education institutions through electronic mail, other electronic forums, and direct network connections to desktop work stations configured for developing multimedia curricular materials.

Design Implications to Consider

- Flexible areas for offices, staff development, a resource library, a media center, peer counseling, and evaluation
- Storage space for materials, projects, and equipment
- Access to computers, modems, telephones, and video cameras and monitors
- Planning space for student teachers and community volunteers
- Planning space for an integrated curriculum team
- Clean, well-lighted, and technologically up-to-date classrooms

Concept 8

Making Instructional and Organizational Changes to Allow Students to Reach Higher Performance Levels

"Moving from the chalkboard and pencils to the big screen has more potential for educational change than any other innovation we can think of since the advent of the printing press. . . . We can feel the excitement of being on the cutting edge of developing these new teaching systems. . . . New methods of learning and testing these new ideas on the computer are moving toward self-teach programs, where the instructor becomes a resource, not the sole source of the curriculum."

Jay Hyde, Vice President, Sh$_2$A Inc., Architects. Quoted in *Virtual Schoolhouse [AB 1962]; A Report to the Legislature on Distribution Infrastructure for Advanced Technologies in the Construction of New Schools, K through 12.*

A school should have high expectations and standards for students in every subject at every grade level coupled with a realization that everyone can learn and everyone learns in a different way. The reconfiguration of groups by grade and age, cross-age tutoring, thematic teaching, an interdisciplinary curriculum, and mastery learning, including basic, enrichment, and remedial skills, are some of the means of achieving these goals. Instructional changes may include using teachers as facilitators and teaching students how to obtain information, organize data, and draw conclusions. Access to technology will allow for the workplace and the community to function as "classroom" space. Each student will have an individualized learning plan tailored to his or her needs.

Methodologies

The methodologies used to implement this concept are based on developmentally appropriate teaching and learning. Instructional methods include cooperative teaching and learning, individualized instruction, and interdisciplinary teams. Quiet, secluded areas promote reflection, reading, and writing. Studios will allow students to focus their study in different skill or curricular areas, such as art, music, technology, athletics, drama, science, or cooking.

Higher performance and accelerated learning by students may be enhanced by organizing time in ways more appropriate to how students learn (daily and annually), by ensuring that grading practices are appropriate and consistent with instructional goals, and by exhibiting successful models of student learning.

Design Implications to Consider

- Movable partitions for grade reconfiguration and multiage groups
- Areas where students can investigate, research, and solve problems alone and in groups with appropriate technological support
- Bulletin board and writing board spaces designed appropriately for student height
- Accessible storage area for learning resources, such as books, computer programs, videos, and compact discs

Concept 9

Initiating Effective Parent In-service Programs and Family/Community Involvement

"While the institution of education uses the setting of the school for focused learning, learning takes place in many different settings. The success of the school as a place *for learning* depends on its ability to create and support learning opportunities—opportunities which will occur both within and beyond its walls. Therefore, the school must enhance the linkage to settings (and spaces) in the greater community—spaces that reflect the values of the community and the needs of the children. A definition of spaces will lead to the creation of *places* for learning."

Gaylaird Christopher, Architect. Quoted in *Transforming the Learning Environment: Supporting Education Through Facility Design*.

School facilities can encourage community involvement and interaction among students, parents, and the community by providing dedicated spaces within the school that invite participation by the larger community. A welcoming center, parent training room, teacher-parent conference areas, and volunteer rooms provide places where students, staff, and parents can mutually support and assist one another. The welcoming center contains desks or room dividers for various community agency representatives and bulletin boards for school and community activities and displays. Parent conference and parent education areas are designed for comfort and have audiovisual presentation capabilities. Security and access, especially for after-hour use of the facilities, are considered in the design.

Methodologies

The methodologies used to implement this concept involve teachers, staff, parents, and volunteers meeting together to plan, share ideas, and receive in-service training and parenting education. The use of school facilities by the community before and after school, by business and community partnerships, and by tutors should be encouraged. Parent and community volunteers should be recruited and encouraged to support classroom activities and bring community resources to the school. Students should be encouraged to use the various community resources through work experience and activities outside the classroom.

The school should foster a sense of community among students, staff, parents, and neighboring businesses and organizations. It should provide family outreach and home-based programs to assist and train parents.

Design Implications to Consider

- Friendly, inviting, and easy-to-find entrances to the school
- Safe, secure, and convenient campus parking
- Architecture and design features that reflect local traditions, history, and cultural heritage
- Space for displays and exhibits
- Space for volunteers to meet
- Facilities for community needs, such as child care, adult education, and senior citizen services
- Space for volunteers to store belongings and supplies
- Building arrangement convenient to community parking and transportation
- Direct community access to appropriate spaces

Concept 10 Expanding the Use of Technology

"Our 'state of the art' technology allows Perkins students to interact with the information superhighway. This technology enables us to join learners to high-quality, competent instructors and information sources in an interactive teaching and learning environment. Our technology enriches and complements all subject areas."

Carolanne Bugue, Vice-Principal,
Perkins Elementary School,
San Diego Unified School District.

Technology may be used for instructional purposes as well as to perform operational and administrative functions (e.g., track personnel, budget, maintenance, and student records). Technology provides multiple vehicles to enhance options available for student learning. For instance, computers serve as tools for writing, computation, and information management and retrieval. Facilities should be designed to allow the integration of current and future technology into all aspects of the school's operation. This integration requires careful consideration of design and network capabilities to provide the necessary infrastructure for installation and use of technology.

Classroom computer stations, electronic bulletin boards, the capacity for group activities using technological apparatus and networks, even the possibilities of virtual reality rooms, should be included in facility design.

To accommodate current and future technology, careful study of technology needs and development of long-range technology plans should precede facilities design.

Methodologies

Effective implementation of this concept is based on ways to make technology invisible yet indispensable to instructional delivery. Integrating technology into the curriculum and training staff for effective, responsible use of technology should be considered. A second consideration should be the provision of technology that is flexible, portable, and supportive of a variety of classroom activities.

Design Implications to Consider

- Electronic bulletin boards and information centers to link students to teachers and home to school
- Computer equipment in labs and classrooms for students and staff
- Space for student stations in classrooms, labs, and library and media centers
- Security for information access and equipment
- Electrical, air conditioning, and lighting systems to support technology
- Computerized locking system for all doors

Concept 11

Creating a School Climate Conducive to Learning

"Our school board's focus on 'schools of the future' and their support for comprehensive facilities planning enabled us to link educational program requirements to architectural design."

Mel Roop, Assistant Director of Facilities Services, San Diego Unified School District.

A successful school climate is based on a cooperative commitment to excellence by all involved: teachers, staff, students, parents, administrators, and the community. There should be trust, mutual support, caring, positive expectations, student-centeredness, closeness to parents and community, a sense of family, a focus on achievement, and a feeling of security and opportunity for all.

The facilities should provide stability and familiarity as well as opportunities for discovery and challenge. Easy access to learning materials for studying privately or in groups will also foster pride in and commitment to learning and achievement. The way facilities are designed has a major impact on how people feel about their school.

Methodologies

The methodology necessary to implement this concept might include providing opportunities for students to have adults as role models for lifelong learning and values. Creating a safe and secure environment is important and develops a sense of community and belonging among staff, students, and the larger community. There should be places for social interaction; spaces for displaying the achievements of students, staff, and community members; and spaces that promote a sense of ownership and belonging.

An aesthetically pleasing and supportive environment should be provided. Delivery of instructional methods should match the research about how students learn best. Early intervention should be provided to ensure successful learning. A well-designed school climate allows students to be self-directed, find information, think creatively, and be problem solvers.

Design Implications to Consider

- Accessible spaces for study materials
- Alarm systems, fencing, and controlled access to the campus
- Space for students or community artists to exhibit their work
- Spaces for social interaction
- Spaces to study privately or in groups

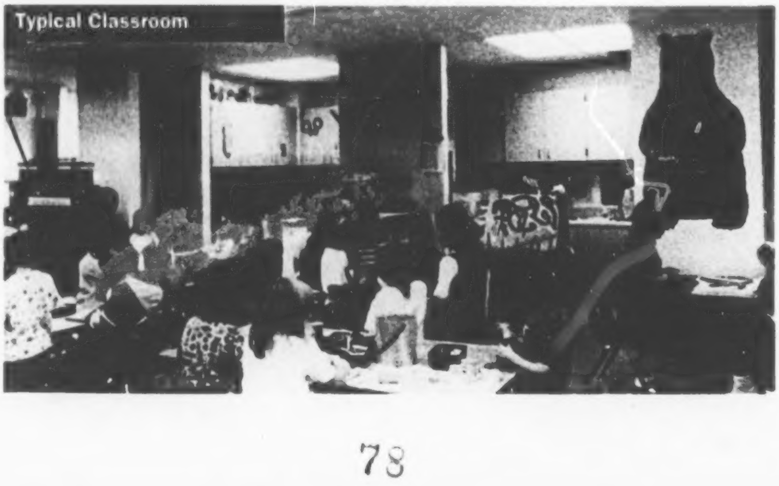
1997 CASH/AIACC Excellence in Design Award

Award of Honor

Brewer Island Elementary School

Brewer Island Elementary School, San Mateo-Foster City School District, Foster City, California, is offered as an exemplary school that reflects the scale and traditions of the surrounding community.

Brewer Island Elementary School presented a challenging opportunity to create a stimulating learning environment with a public presence that would appeal to the 550 students at this school for kindergarten through grade five. The school represents several "firsts" for the community. It is the *first* new elementary school in the growing community. It also incorporates the *first* newly designed shared-use facility with Foster City. The school district envisioned an educational program and facility that would be an extension of home, community, and society and provide strong channels of communication. By using a cooperative planning process and an effective communication plan, a design concept was achieved that meets the needs of the San Mateo-Foster City School District and the Foster City community.

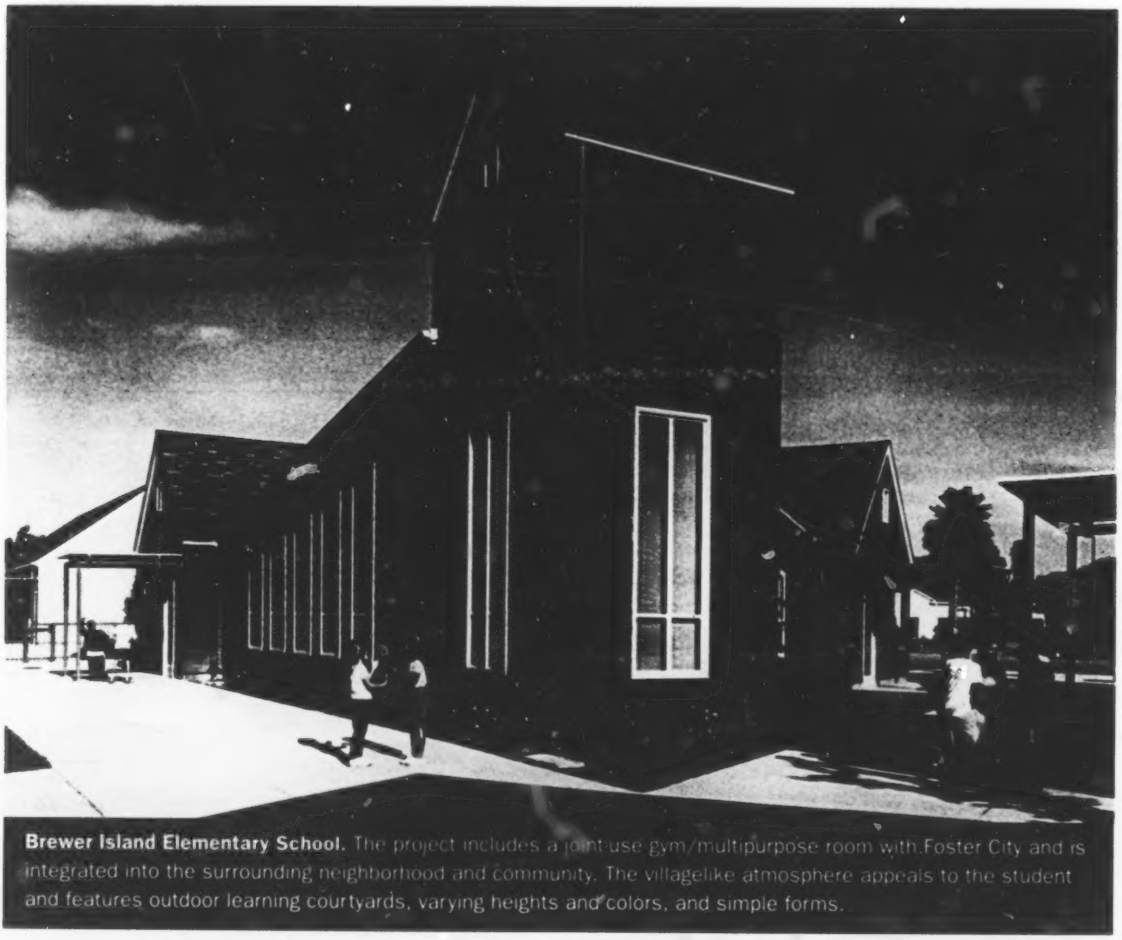


Typical Classroom

Construction Data on Brewer Island Elementary School	
Grades:	Kindergarten through five
Student Population:	550
Type of Project:	New construction
Funding Source:	Non-state aid
Construction Completed:	January, 1996
Square Footage:	38,937 square feet (71 square feet per student)
Construction Cost:	$6,100,000 ($105.66 per square foot/ $11,091.00 per student)
Architect:	The Steinberg Group Contact: Robert T. Steinberg, FAIA (408) 295-5446
School District:	San Mateo-Foster City School District Contact: Richard Damelio, Superintendent (415) 312-7700
Contractor:	Nibbi Bros., Inc.
Structural Engineer:	DASSE Design
Mechanical Engineer:	Capital Engineering Consultants
Electrical Engineer:	Koch, Chun, Knobloch & Associates
Acoustical Engineer:	Charles Salter Associates, Inc.
Landscape Architect:	Gates & Associates
Photographer:	Robb Miller Photography

Basic Site Design

The school was constructed to alleviate overcrowding in the school district. Because existing support facilities were primarily used for community programs, it was necessary to create an educational environment that continued to be a resource to the community. This site design allows the community to continue to enjoy shared use of the gymnasium/ multipurpose facility, yet an integrated on-site preschool separates the school activites without evoking a sense of isolation. The design is contemporary in a traditional Cape Cod style with marine characteristics that are suited to this bay city. Charged with a mandate to reflect the architectural vernacular and scale of the surrounding residential community, the architect conceived a villagelike atmosphere that appeals to the student population. The varying heights and colors embodied in the design concept charm and enliven a child's curiosity. These design elements are carried into the classrooms. Unique areas include outdoor learning courtyards between classrooms that are equipped with wet counters for science and art curricula. These outdoor learning spaces reflect the school's mission for an educational milieu that models respect for the environment and helps students develop an understanding of the interdependent nature of the world.



Brewer Island Elementary School. The project includes a joint-use gym/multipurpose room with Foster City and is integrated into the surrounding neighborhood and community. The villagelike atmosphere appeals to the student and features outdoor learning courtyards, varying heights and colors, and simple forms.

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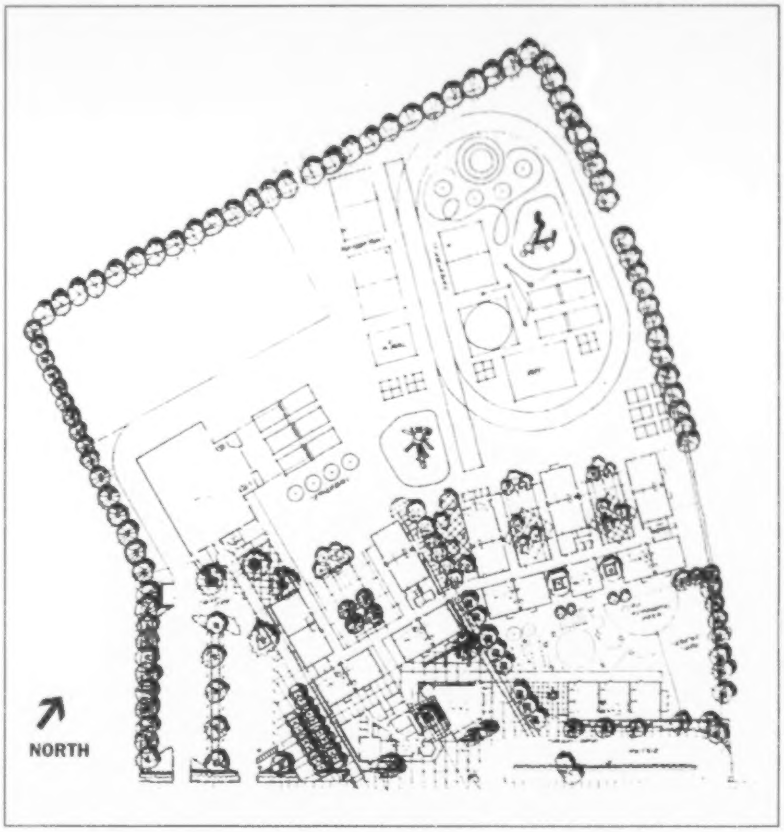
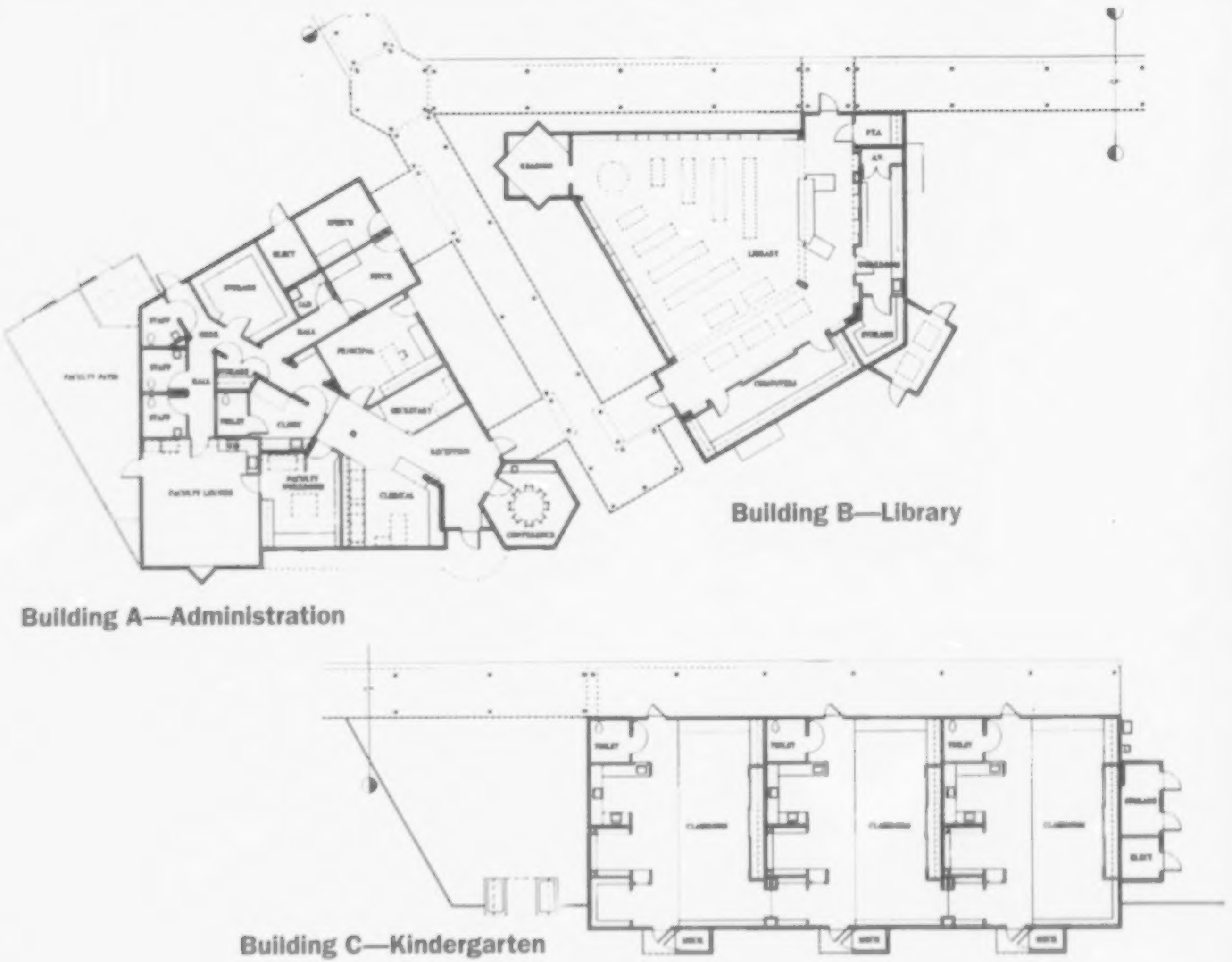
Site Plan of Brewer Island Elementary School



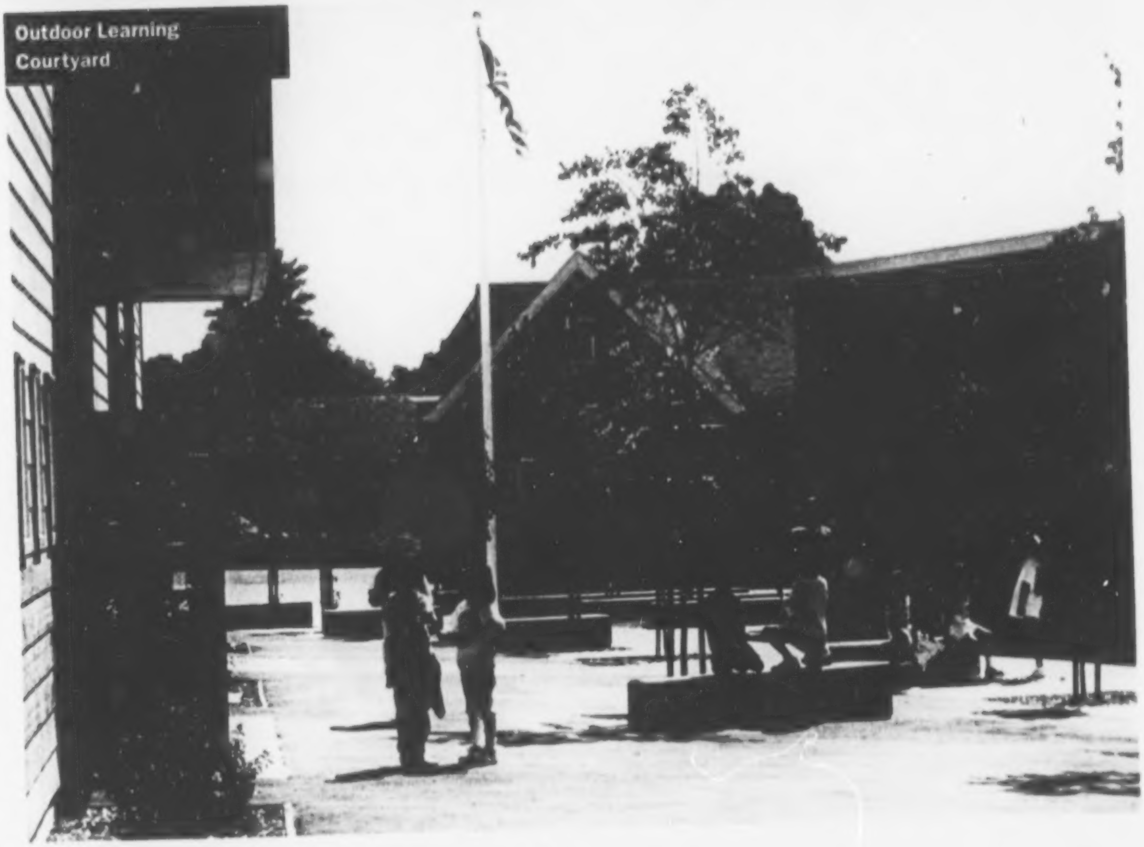
Site and Design Constraints

The site represented a challenge for a variety of reasons. First, it was located on landfill adjacent to San Francisco Bay. The design had to address safety concerns regarding liquefaction associated with seismic activity, settlement, and the integrity of neighboring levees. By utilizing wood/steel hybrid construction supported on a "gridded" mat foundation, the design alleviated those concerns. In addition, the small site was constrained by its surrounding residential neighborhood. Access and traffic issues were mitigated by incorporating several drop-off sites and two parking lots with circular ingress and egress. Particular attention was paid to acoustics. Air traffic noise from the adjacent flight path for San Francisco International Airport required special consideration in this area. Last, faced with a construction estimate that exceeded available funding, the architect was able to provide design alternatives that preserved the integrity of the educational and building program and stayed within budget guidelines.

Floor Plan of Brewer Island Elementary School



School Library


Outdoor Learning Courtyard

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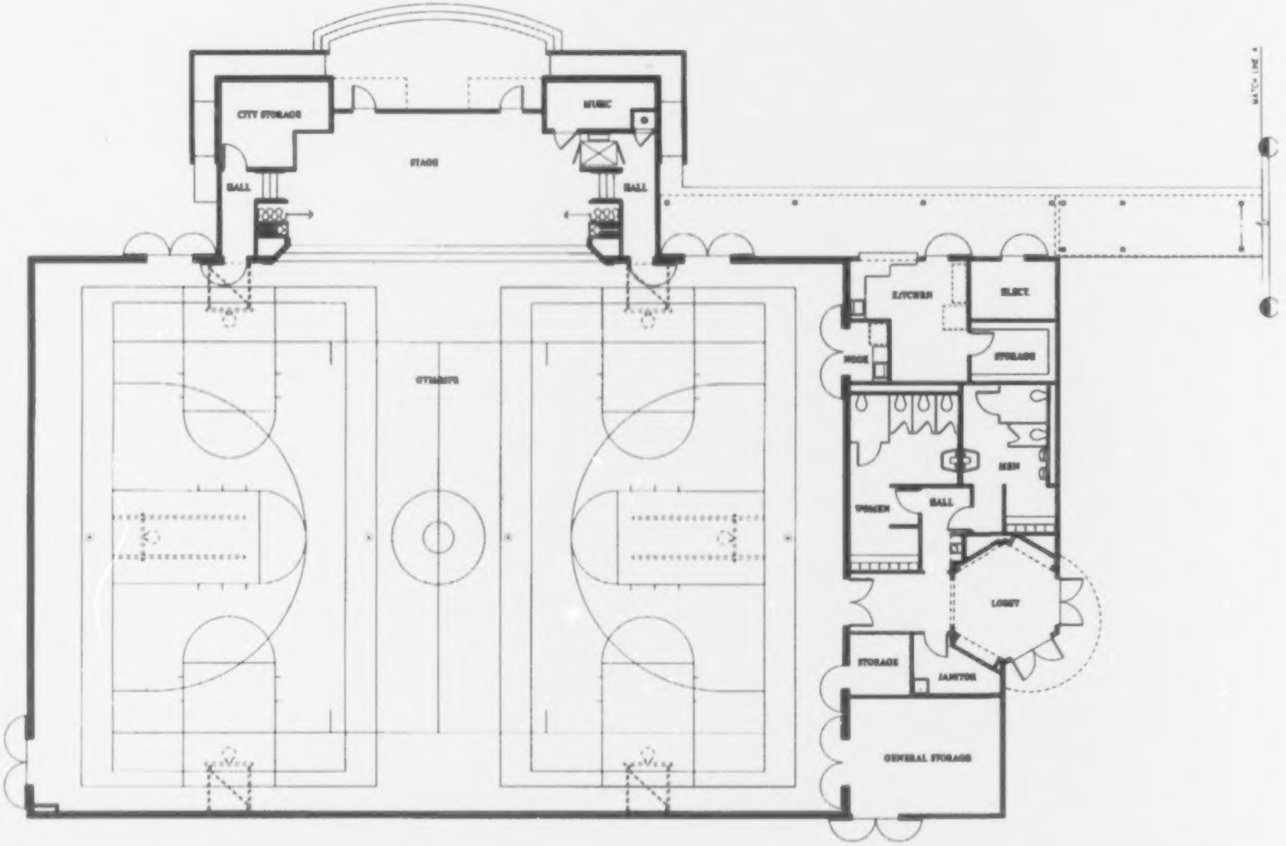
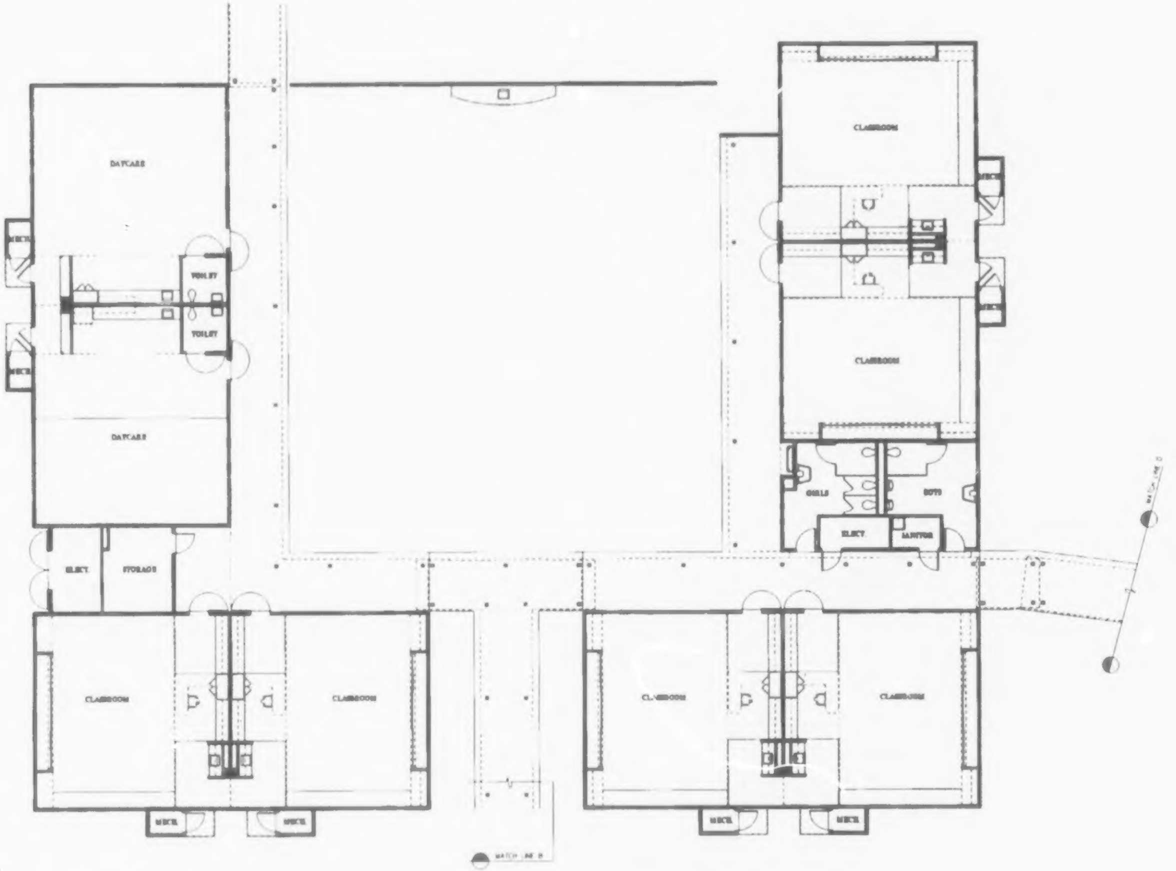
Floor Plan of Brewer Island Elementary School



Building D—Gymnasium

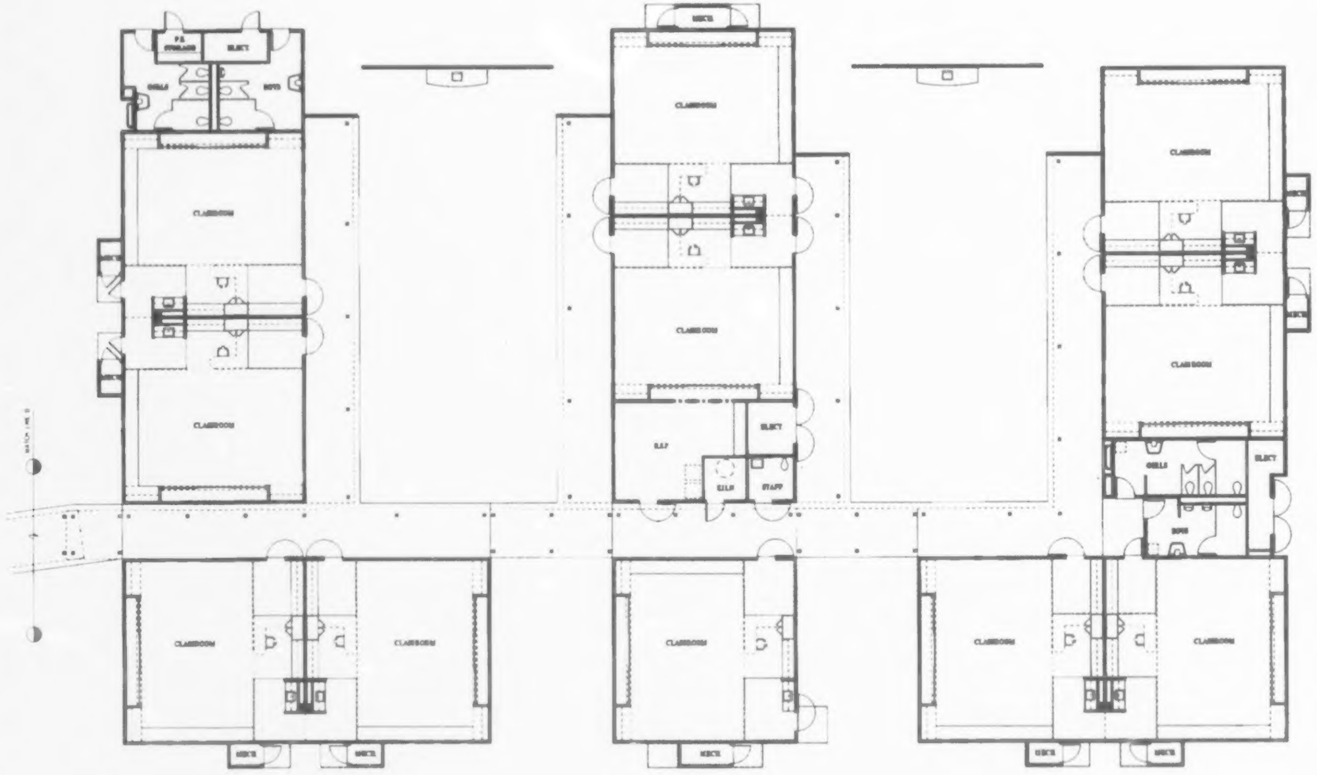
Floor Plan of Brewer Island Elementary School



Building E—Classroom

Building F—Classroom

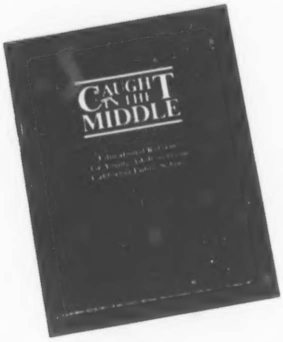
Floor Plan of Brewer Island Elementary School



Building G—Classroom

Building H—Classroom

Building I—Classroom



Concepts Selected by the Middle School Task Force from

Caught in the Middle

The middle grades represent a period of significant transition for middle school students discovering their uniqueness. The instructional program begins to focus on specific bodies of information (e.g., home economics/consumer science, gym, shop) and development of skills. The format of the instructional day changes and requires students to become more aware of blocks of time and adjust to different teachers. Student needs span a wide range of intellectual, physical, psychological, and social development issues. In short, it is a time of academic stress. The middle grades may represent the last chance for the formal education setting to develop within the student a sense of academic purpose and personal commitment to educational goals. Lack of success during the middle school years may contribute to students dropping out in high school. Too often middle school students have already begun to drop out emotionally and mentally—a situation that makes a meaningful connection to students critical at the middle school grade level.

"When faculties (and facilities) reach out to students with energy, excitement, respect, and creativity, the basis of student accountability for academic excellence and personal behavior becomes visible, symbolic, and powerful in its consequences."

Caught in the Middle: Educational Reform for Young Adolescents in California Public Schools

The middle school supports the transition between the directed, experiential learning opportunities at the elementary school and the self-directed, independent studies available at high schools. The design of facilities will complement this transition. The facility should captivate the student with exciting details and spaces that appeal to the student's sense of vitality. Facility design can make the student feel that the place is special and, therefore, can establish that the individual is special. Aesthetics should be emphasized with a facility layout that is easy for students to figure out, minimizing the lost feeling common in young adolescents. The creation of identifiable clusters of space that students can call their own is important in providing for socialization among students and with teachers. An adequate physical plant should be provided for middle schools and should allow for a wide variety of specialized instructional experiences.

"We want to design buildings that meet needs we cannot even anticipate in the rapidly changing society of the 21st Century."

Palo Alto Unified School District, *Schools for the 21st Century: Final Report.*

From its review of *Caught in the Middle*, the Middle School Task Force identified the following basic components of systemic reform:

1. Engaging students in a meaning-based, integrated curriculum
2. Implementing performance-based accountability and assessment
3. Providing effective student support and reducing the dropout rate
4. Establishing an environment of professionalism for teachers and staff
5. Initiating effective parent in-service programs and parent/community involvements
6. Making instructional and organizational changes to allow students to reach higher performance levels
7. Creating a school climate conducive to learning

Concept 1

Engaging Students in a Meaning-based, Integrated Curriculum

"As California prepares to enter the 21st century, students and educators alike are confronted with an ever-changing and expanding sea of new information and knowledge. As we visualize new methods and technologies for organizing and delivering this wealth of information, it must be kept in mind that schoolhouse designs themselves must also be supportive of these goals. For without both a vision and the facilities for effective implementation, new technologies are irrelevant."

Virtual Schoolhouse [AB 1962]: A Report to the Legislature on Distribution Infrastructures for Advanced Technologies in the Construction of New Schools, K through 12.

To engage students in the curriculum, the school should use all teaching methods and tools at its disposal. Some of these methods might include interdisciplinary, active, hands-on experiences and cooperative work. Tools include instructional materials, technology, equipment, and software.

Methodologies

Students become more interested in education if they see its relevancy to real life. An interdisciplinary curriculum can give students a glimpse into the interrelatedness of subjects and their application to real life. It is important to provide time and space for students to work independently as well as collaboratively. Both scheduling of classes and educational philosophy affect the layout of buildings and related facilities.

Technology and its use in education are transforming both learning activities and the design of optimal learning environments. As a result, the traditional school building is being challenged as learners have increased access to advanced information and communication technology.

Design Implications to Consider

- Areas for gatherings and displays, both formal and informal
- Accessible library and media center
- Planning space with adequate tools to support teacher preparation
- Openly displayed structural and other facility systems
- Technology as the basic requirement for the classroom
- A facility layout to reflect the way in which courses interrelate

Concept 2

Implementing Performance-based Accountability and Assessment

Student accountability requires high content and performance standards formally established by the school district at every grade level for every subject. It requires community involvement, recognition, and examples of model behavior by teachers, principals, and community members. The design of facilities can reinforce student ideals and promote local educational goals. When facilities reach out to students with energy, excitement, respect, and creativity, the basis of student accountability for academic excellence and personal behavior becomes visible and powerful.

Assessment is the measurement of a broad range of educational goals related to student achievement and program effectiveness.

Methodologies

Performance-based accountability and assessment require the establishment of academic standards, allow demonstration of modeled behavior, and enhance communication within the school and from school to the community.

Assessment measures include traditional methods, such as quizzes and tests, as well as new authentic assessment practices, such as student products, demonstrations, videos, audio tapings, portfolios, model businesses, and interdisciplinary projects. Such methodologies are accomplished in small groups, by public display, in public assembly areas, and in spaces for interaction.

"An Outcome Equity Policy should be implemented to ensure that upon project completion, all school sites will meet program and facility standards consistent with the district's Master Plan."

Planning Process for School Site Renovation to Ensure Equity and Community Input.

Design Implications to Consider

- Studios designed with specialized sound and lighting features
- An infrastructure for computers and other technology, such as video cameras and monitors, editing equipment, audio recording equipment, and electronic storage equipment
- Facilities able to adapt to changing techniques of ongoing student assessment
- Spaces appropriate for public display, public assembly areas, and spaces for performance-based assessment

Concept 3

Providing Effective Student Support and Reducing the Dropout Rate

"If we expect educators to teach to higher standards and students to reach those higher standards, we must guarantee a safe, peaceful, and welcoming educational environment so that teaching and learning can flourish."

Safe Schools: A Planning Guide for Action.

The middle grades represent a transitional time for students who often have extreme or varied needs and abilities. The educational program and environment should take into consideration the different rates of intellectual, biological, and social maturation of each student. Aesthetics should affirm the value of the individual. Spaces in which students can act, react, and view their various accomplishments are needed. Sensitive facility design can reduce academic stress and promote self-esteem, social engagement, and physical safety.

Programs for at-risk students require space for individual teaching by adult tutors or peers and space in which basic life skills can be taught. Lifetime attitudes toward physical fitness can be encouraged in middle school. Every school needs a gymnasium, preferably one with showers and lockers. Physical education facilities should serve all students, staff, and the community, when possible. Counseling and instructional spaces used for nutrition, mental health, substance abuse, and medical services should be inviting and private, not sterile and clinical.

Methodologies

The methodologies to provide effective student support and reduce the dropout rate should include varied instructional strategies, examination of scheduling modules, delivery of a well-organized curriculum, and the use of technology that is beneficial to all students.

Student needs that are not being met at home should be addressed by creating extended blocks of core time, nurturing student-adult relationships, and providing tutors of all ages from peers to senior citizens.

Students should feel comfortable receiving counseling and guidance services. Such services may be provided by a variety of resources, such as counselors, teachers, community members, administrators, conflict managers, and other professionals. Counseling and guidance services may take place in such settings as the classroom, nurse's or counselor's office, or off campus under professional supervision—all at convenient times before, during, or after school.

Health education and practices should be an integral part of the curriculum so that students can practice good hygiene and physical fitness daily. Ideally, integrated health care services should include emergency medical treatment, preventive medical education, and intervention medical counseling. District policies should integrate health care services and the teaching of physical health and fitness. In general, well-maintained campus facilities and clean, well-kept rest rooms are important for physical hygiene as well as for student self-esteem.

Advisory and education information should be communicated through online services, printed or electronic mail, audio messages, video programs, and personal contact.

Design Implications to Consider

- Clustered or central study centers, varied sizes of classrooms, individual study areas, instructional media center or library access, and designated open or closed campus areas
- Spaces for tactile, auditory, and visual learning; spaces for independent and small-group work; spaces for tutoring and social interaction; spaces for hands-on exploration
- A homelike environment with warm colors and soft textures and on a cozy scale
- Easy access to the entire campus
- All spaces bright for easy visibility
- Accessible, private counseling areas
- Easily reconfigured, inviting furniture and equipment (in color, scale, and design), which encourage personal communications, indoor and out
- Places to attend to medical needs in a nonclinical atmosphere, with sinks, bathrooms, special arrangement for medical wastes, secure storage for medicine and equipment, observation rooms with one-way glass, and communication equipment
- Medical practitioner and guidance counselor offices consistent with program philosophy and goals
- Accessible student rest rooms that are functional and safe yet maintain necessary privacy

Concept 4

Establishing an Environment of Professionalism for Teachers and Staff

"Middle grade teachers and principals should participate in comprehensive, well-planned, long-range staff development programs which emphasize professional collegiality. . . . Superintendents, central office administrators, and principals should provide collaborative leadership in solving logistical problems. Such leadership is essential to the successful implementation of comprehensive staff development programs, including:

a. Provision of adequate blocks of time for professional learning activities

b. Allocation of convenient [appropriate and adequate] sites and appropriate facilities"

Caught in the Middle: Educational Reform for Young Adolescents in California Public Schools.

Establishing a professional environment for school staff requires both staff development and collegial support, with appropriate facilities: meeting rooms, professional libraries, and common planning spaces. Development and retention of good teachers will be easier in a facility that provides for teaching functions in a dignified and supportive way. Teachers, as well as students, need a work environment where a strong commitment to safety has been made.

To implement well-planned, long-range staff development programs that emphasize professional collegiality, middle grade teachers and principals need spaces for school-site decision making and collaboration about individual student performance and progress.

Methodologies

The methodologies used to establish an environment of professionalism will require on-site professional development activities for teachers and staff and allow interdisciplinary teams to take an active role in designing programs as well as developing the curriculum. Parents and the community will also need a vehicle for making suggestions about the staff development plan.

Research materials will be available to the staff, with emphasis on electronic material. Collaborative planning among teachers, counselors, principals, and central office personnel and exploration of new methods of teaching and learning should be encouraged and facilitated.

Student learning can be supported further by strengthening collaborative and working partnerships with families and the community, such as by providing information and ideas to families about how to help students at home and school and coordinating volunteers in the classroom.

Design Implications to Consider

- Planning space for interdisciplinary teams
- Secure areas for personnel equipment and materials
- A central location in which to congregate and exchange ideas, small-group spaces, and space for staff research activities
- Space for computers and an infrastructure for networking and access to electronic materials on and off campus
- Specialized collaborative planning space and a staff library for teachers, counselors, principals, and central office personnel
- Work stations in the classroom with desktop computers connected to a local area network and the Internet, a video display monitor, and a telephone
- Storage areas for year-round teachers and work stations for off-track teachers

Concept 5

Initiating Effective Parent In-service Programs and Parent/Community Involvements

The school district should encourage parent, business, and community involvement in the educational process. Involvement may include assisting with classroom organizational tasks and student learning; teaching minicourses in areas of expertise; helping in the library, cafeteria, and at open house, conferences, and various school meetings; coaching intramural athletic events; and chaperoning field trips, socials, dances, and other extracurricular activities. The school facility may be made available to the community for outside functions as a method of gaining community involvement and a sense of community ownership of the school. A community link can be established through local cable television or a community publication. Districts that practice school-site decision making will be providing space for meetings that include staff, parents, students, and community members.

Keeping certain areas of the campus open to the public during and after school hours will require additional campus security. On-site utilization may be reduced if joint-use agreements can be reached with businesses and public entities. Display space may bring student achievement to the community's attention. Valuable equipment and books from outside sources require secure storage.

"Parents are generally very apprehensive about the middle school years of schooling. Junior high schools have been seen for many years as the least productive and most worrisome public educational institutions. . . . The reports of parents who participate in these school activities help set a tone that fosters school support [academic and facility] in the community."

Caught in the Middle: Educational Reform for Young Adolescents in California Public Schools.

Methodologies

Initiating effective parent, business, and community partnerships requires identifying and tailoring the educational reform to the interests, ideals, and specific needs of the community. Public and professional forums are vehicles through which suggestions from parents and community leaders can be obtained. Multidimensional plans, which include family-school collaboration, could be used to foster strong and meaningful partnerships among parents, other family members, and school staff. School projects and activities are major avenues for strengthening community and public relations.

Joint-use agreements are one way to expand spaces available to the school and the community. Some parts of the campus will be open to the public for community use. Community businesses and public spaces may in turn be used by the school. The school should use community publications and links through local cable television to present student achievement to the community.

Design Implications to Consider

- Community activity space and bulletin boards for use in meeting and organizing
- After-school hours security system
- Community use of computers and resource materials in the library, kitchen space in the multipurpose room, and sports equipment in the gymnasium and athletic field
- Space for belongings, automobiles, equipment, and supplies of volunteers

Concept 6

Making Instructional and Organizational Changes to Allow Students to Reach Higher Performance Levels

"We hope that by reflecting new visions of learning, educators and architects [can create] 'three-dimensional textbooks' that use the learning environment as a teaching tool."

Association for Supervision and Curriculum Development. "How Schools Are Redesigning Their Space," *Educational Leadership*, September, 1993.

For students to develop critical and analytical thinking skills (e.g., problem solving, aesthetic judgment, and use of scientific methods), the facility should provide spaces to support projects, problem-based investigations, simulations, and individual and group work. Students can work independently, receive tutoring, and accept instruction, as necessary. Each student has a learning plan that is tailored to his or her needs and that provides parents with a clear understanding of expectations.

The school should capitalize on the restless energy, fascination with peer culture norms, and curiosity typical of this age group. The facility will need to accommodate diverse learning modalities (e.g., kinesthetic, auditory, and visual) and instructional strategies, such as the teacher as facilitator or as direct instructional leader, and the inclusion of community members as part of the instructional program. The layout of the school should emphasize the shared areas and define the learning team structure.

Schools will have technology for use in learning and working. The integration of instructional technologies will require various types of technology in the classroom, new instructional strategies, and online access to external information bases. These amenities require a facility that includes storage for instructional technology, spaces in which students and staff may have access to this technology, and security to safeguard the information and equipment.

Methodologies

The methodologies used to attain higher performance levels are based on assigned projects, problem-based investigations, and simulations and involve individual and group work. Drama, collaborative language activities, instructional technology, and oral presentations are other means. There may be off-campus outreach programs and student study teams.

Interdisciplinary team organization brings teachers and students together to establish authentic learning communities.

Media resources and inclusion of community members will be needed as part of the instructional program. There will be more focus on emotional and physical health, physical fitness, substance abuse prevention, and nutrition.

Design Implications to Consider

- Classroom space in which to work on projects and storage areas with ample room to store projects in progress
- Specific computer space and wiring, instructional technology equipment, and utility access
- Flexible space for such activities as group interaction and performances and flexible furniture to accommodate changing activities
- Spaces for physical education, performing arts, science activities, fine arts, and preparation of projects by students and staff
- Space for counselors and medical practitioners

Concept 7

Creating a School Climate Conducive to Learning

"Students cannot learn in an environment where they do not feel safe. Clean, well-lighted, safe schools are essential for learning."

Delaine Eastin, State Superintendent of Public Instruction, News Release No. 95-49: "Eastin Unveils Major New Reform Challenge in Back-to-School Message."

Learning environments should be clean, well lighted, and safe, conveying a sense of order and purpose. Efficient classroom organization requires spaces designed for storage and other instructional purposes. A facility that reflects the student-centered curriculum should be a special place with emphasis on ambiance and aesthetics to promote self-esteem, individual worth, and the importance of education.

Every middle grade student needs a positive school climate that reflects a strong, student-centered educational philosophy. This school climate should be apparent in the design of the facilities and should be established before the design. The facilities should encourage interaction among students and staff and help teachers involve the students in the curriculum. Each middle grade student will greatly benefit from a strong, student-centered school climate and environment. School facility design will be a major contributor to such an environment. A well-designed school facility enhances student-teacher interaction, aids the teacher in engaging students in the curriculum, clearly conveys the presence of school leadership to students, and establishes the presence of school administrative services to students and staff.

Community activities, such as socials, plays, open houses, and athletic events, bring the school and the community together. Extracurricular and intramural activities develop a sense of personal connectedness to school through activity participation, interaction, competition, and service.

The facility layout should ensure supervision of students between classes to prevent altercations and intrusion from outside the school. Students and staff need safe, secure schools in which to learn and to teach.

Provisions should be made to secure the personal belongings of the students and staff during the day.

Methodologies

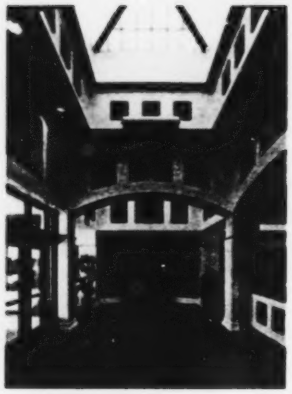
Involving students in curriculum and lesson planning is a means of creating an instructional climate conducive to learning and establishes attitudes of school ownership among students. Such methodologies include (1) developing a professional-client relationship between the staff and students and involving staff in student-centered activities; and (2) allowing students to involve the community in the school through socials, plays, open houses, or athletic events.

Access to extramural sports should be provided for all students, and staff and community participation should be welcome. Interest in clubs, classroom guidance programs, science fairs, pep squads, community projects, and academic competition should be encouraged. The community may be informed of campus activities through school assemblies, sections of the local newspaper, and participation in programs on public access cable television.

Whether the campus is open or restricted will determine the layout of the site.

Design Implications to Consider

- Community-use spaces designed for sports or civic activities, performing arts, trainings, and presentations
- Clearly demarcated areas that are open to students and the public
- Areas in which all staff can meet and participate in planning
- Staff preparation spaces close to the instructional areas
- Supervision of the area of the campus that is least frequented and campus buildings arranged to create a sense of security
- Spaces for community events and community involvement in extracurricular and intramural activities



1997 CASH/AIACC Excellence in Design Award

Award of Merit

New Vista Middle School

New Vista Middle School, Lancaster Elementary School District, Lancaster, California, is offered as an exemplary facility that reflects concepts promoted in *Caught in the Middle*.

New Vista Middle School, serving students in grades six through eight, is the culmination of six years of effort to create a facility that reflects the school district's middle school philosophy. The district staff met with teachers, administrators, parents, and community leaders to develop the criteria for the middle school concept. The planning committee envisioned the elements of a safe, nurturing environment coupled with a sense of place in the community. The facility emphasizes education as an important element in the community, creating a learning environment that has exceeded everyone's expectations.

Construction Data on New Vista Middle School	
Grades:	Six, seven, and eight
Student Population:	1,200 students (year-round)
Type of Project:	New construction
Funding Source:	State aid
Construction Completed:	1996
Square Footage:	62,000 square feet (51.7 square feet per student)

Construction Data on New Vista Middle School (Continued)

Construction Cost:	$9,200,000.00 ($148.39 per square foot/ $766.66 per student)
Architect:	Flewelling & Moody Contact: Ara Zenobians, AIA (213) 256-4151
School District:	Lancaster Elementary School District Contact: Dr. Stephen Gocke, Superintendent (805) 948-4661
Contractor:	Aoki-Parton & Edwards
Structural Engineer:	Johnson & Nielsein
Mechanical/Plumbing Engineer:	John Denton & Associates
Electrical Engineer:	Frank Frimmel
Civil Engineer:	Denluck/Switzer Associates
Landscape Architect:	Robert Shryock
Irrigation Consultant:	Associated Irrigation Consultants

Basic Site Design

Architectural features include stylized western storefront elements and details coupled with brick to create a reflection of the school within the community and tie it to its desert town heritage. The brick represents the permanence and solid base that education gives to the community, and the storefront exterior reflects the town's agrarian roots.

Most of the school is located in the main building. This allows for greater supervision of the 1,000 students on a year-round schedule. Students and staff can circulate efficiently in this facility without being exposed to the harsh desert environment. The courtyard, the main building, relocatable classrooms, and the gymnasium provide a safe haven for students because the mass of buildings blocks the 20-mile-per-hour (and higher) desert winds.

Although the school is compact, there is an abundance of natural light throughout the facility, making it highly energy efficient. The entry to the school is clearly defined yet is protected from the desert's elements. The lobby and reception area, with its open ceilings, are a grand use of space and offer a warm introduction to the very heart of the school.

New Vista Middle School
The facility features stylized western details coupled with brick to tie the building to its desert heritage.

Support Facilities

The gymnasium, library, and multiuse rooms are in locations that allow for community or after-hours use without having to open the main campus.

Academic Facilities

The various academic activities are grouped together to create core areas: science and math, language arts, social studies, vocational education, and fine arts. Work areas are located between classrooms for staff and student projects, creating numerous opportunities to provide focused learning so that students can explore accordingly.

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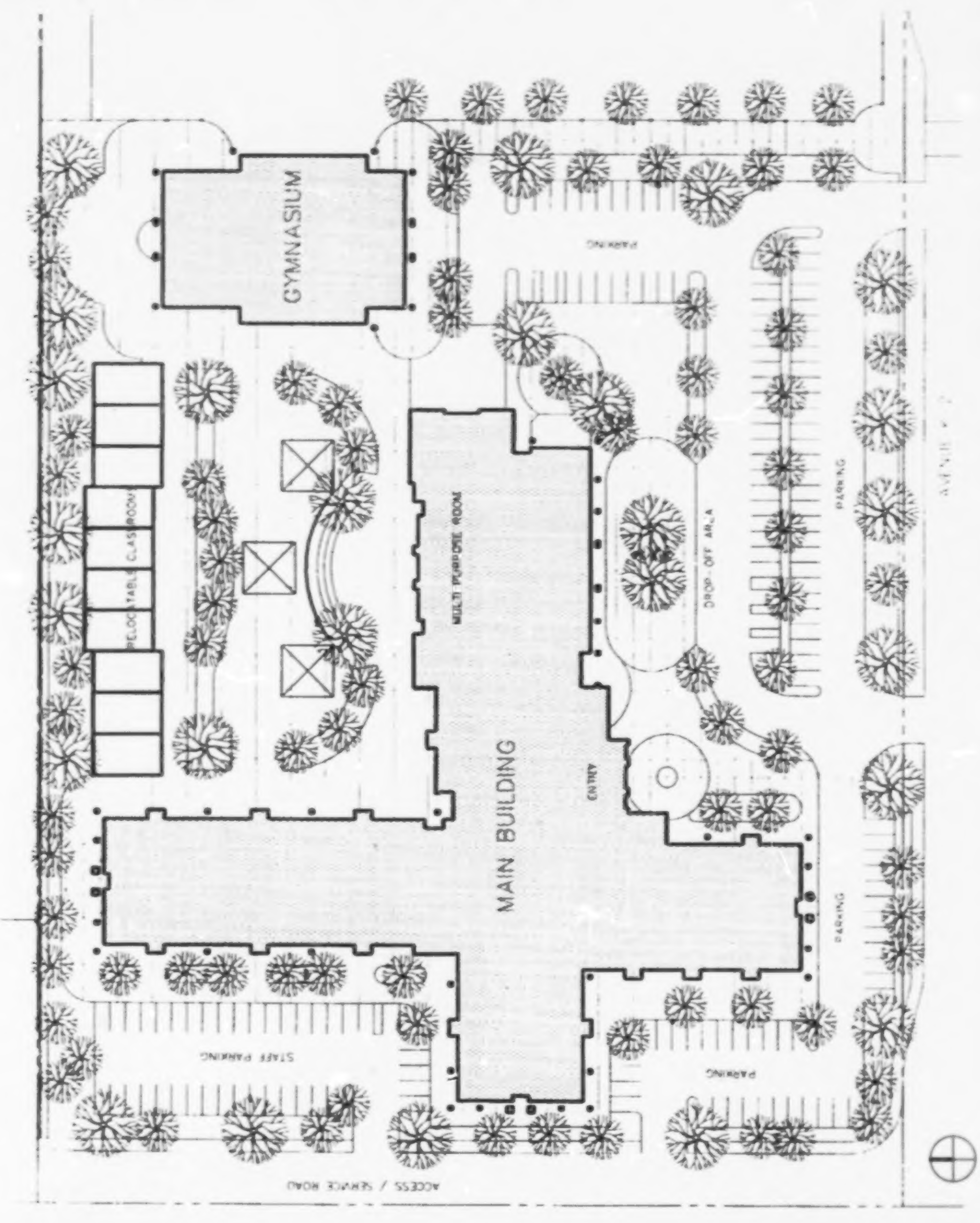

Site Plan of New Vista Middle School. The school site includes extensive playfields east of the gymnasium. Relocatable classrooms are integrated as part of the school by forming the fourth "wall" of the quadrangle. The courtyard provides a defined space for socializing.

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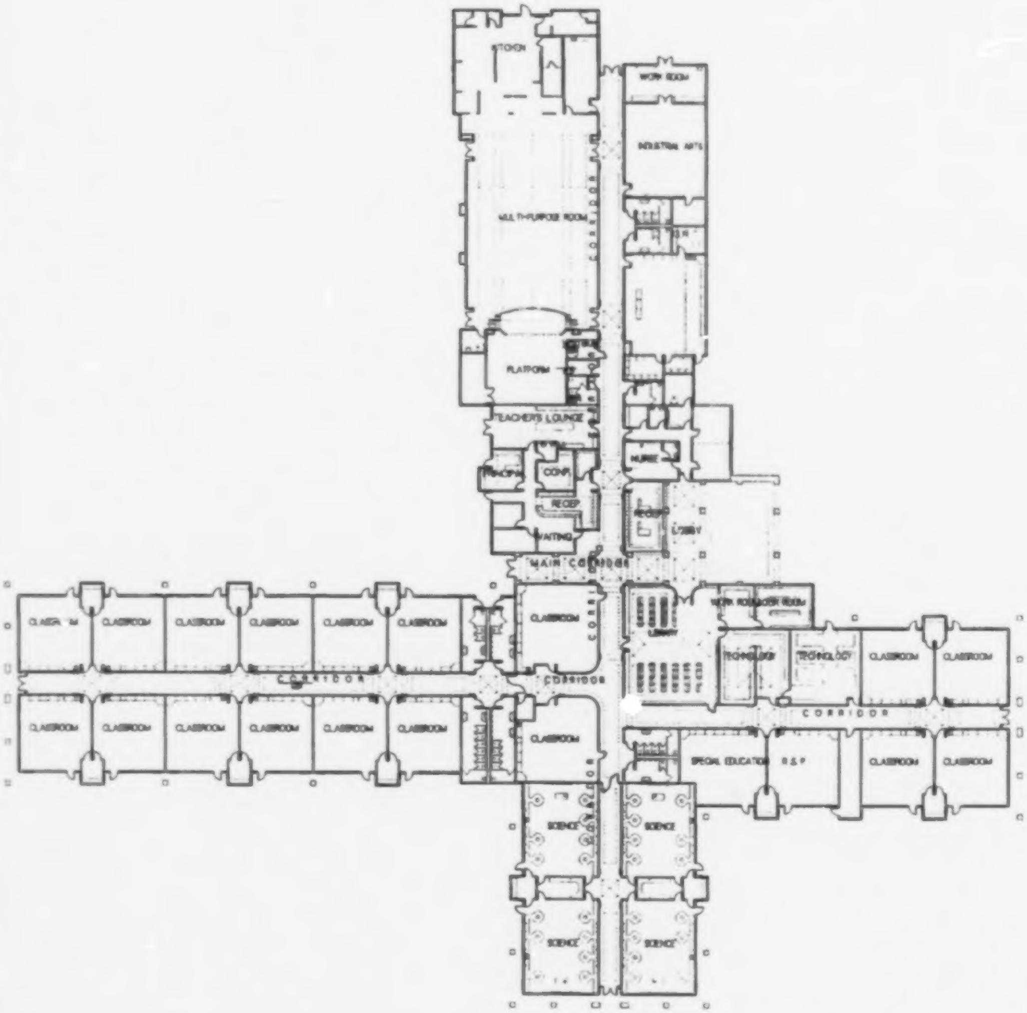
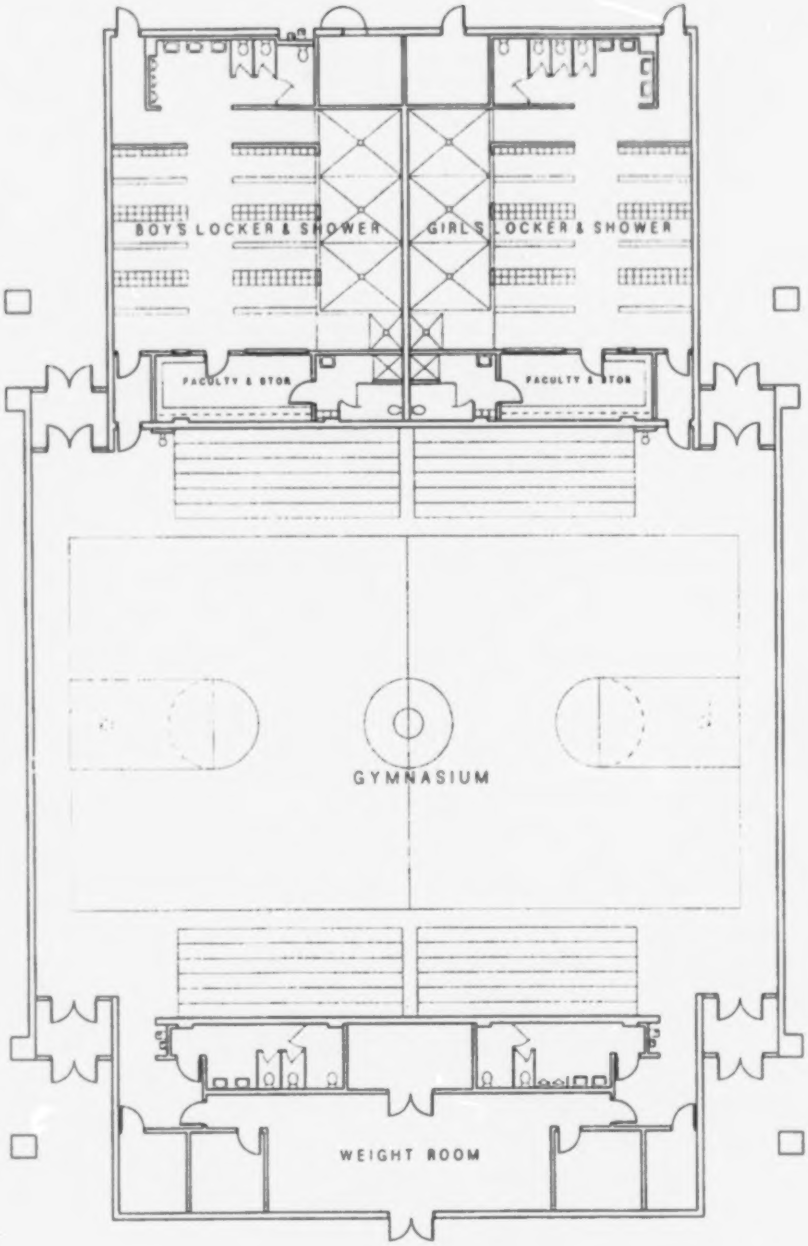
Academic activities are grouped together to create core areas.



The gymnasium, library, and multiuse rooms are in locations that allow for community or after-hours use without having to open other areas of the campus.



Concepts Selected by the High School Task Force from

Second to None

"Before a school can be a model school it has to be experimental. And if it is experimental and it works, then it is a model school."

Henry Heydt, Ed.D., Assistant Director, School Facilities Planning Division, California Department of Education. Quoted in "Building the Model School," in *American School & University*, October, 1995.

The traditional high school design is strongly determined by a daily schedule divided into uniform periods, each of which is worth the same number of units. The number, size, and location of classrooms is a result of efficiently grouping and moving students so that they may accumulate time units. In contrast, an educational environment that is *learner-focused* completely changes this approach. The practice of learning, with all students doing the same task at the same time in the same way, is no longer valid. Teaching is not simply a teacher instructing a group of students. Every aspect of school changes (e.g., pedagogy, governance, calendar, curriculum, assessment, accountability, educational technology, location), and even the school facility is affected. These fundamental changes in virtually every area of education confirm and predict that traditional schools will increasingly be perceived as unable to prepare contemporary students for twenty-first century challenges.

This vision of the new California high school, a vision that will prepare students for the twenty-first century, is defined in *Second to None*. As the student population changes, as the job market demands increasingly more technical skills and higher levels of preparation to acquire those skills, and as schools and communities enter into new relationships of services and responsibilities, the high school, too, should undergo dramatic transformations.

Some of the transformations affect attitude, some affect curricula, and others affect the design of our schools and classrooms. In analyzing *Second to None*, the task force identified six basic concepts having design implications. The following concepts differ in minor ways from those noted in the other grade levels and are the concepts also reflected in the Challenge School Districts Reform Initiative:

1. Restructuring the school
2. Developing powerful teaching and learning
3. Creating new professional roles
4. Establishing a comprehensive accountability and assessment system
5. Providing comprehensive student support
6. Providing career paths to desired outcomes

Concept 1 Restructuring the School

Restructuring the school is the paramount concept in *Second to None: A Vision of the New California High School*. Examination of the traditional premises of teaching and learning and of the organizational structures that support those premises is essential. Areas of school organization with facility design implications include management structure, community and business relationships, access to higher education learning opportunities, grade-level and calendar reorganization, student-teacher relationships, information management systems, professional development, classroom formats, and technology in education.

Methodologies

Restructure of the school should be based on the mission and goals of the school district, educational philosophy of the community, school administration style, community and business needs, the population served, and the interface required to use other educational institutions.

The management and educational philosophy of the school include such concepts as grade-level configurations, centralized or distributed services, and site-based decision making and planning.

Community and business needs, once assessed, need to be translated into parental roles, joint-use agreements, the use of volunteers in apprenticeship programs, the use of instructors from the business and general community, and the possible sharing of resources.

Technological labs should reflect the current technologies used in the world of work and should support cooperative programs of instruction with local business interests.

As more decision making is given to each site, governance space needs to be created. The governance spaces include not only the overall school management and health functions but also the "Council Hall." This room is like the senate chambers in that the appointed and elected representatives meet to govern the school. Represented are students, staff, parents, community members, and administration. The space can also double as a staff development center.

Depending on the population to be served, cooperative learning and a defined academic foundation may be appropriate methodologies. Students need to be shown the connection between earning and learning.

Concurrent enrollment in local colleges and other educational institutions may supplement the school program in special areas and in technical training.

Work areas and cooperative activity space are provided in each learning area. Consultation areas are provided for teachers in advisory

"The establishment of Site Planning Committees provides direct community involvement and requires active communication networks. The supporting organizational structures and processes ensure public accountability through community and Board review at regular intervals throughout the project. The process is designed for continuous improvement of self-renewal with each successive school site experience."

Planning Process for School Site Renovation to Ensure Equity and Community Input.

roles. The school is wired and equipped with comprehensive technology in all of the learning areas.

Large and small instructional spaces are provided for professional development. A professional library and research data system are available to the staff.

Design Implications to Consider

- Buildings arranged by career clusters or specialized academics and programs within the school with service and leadership functions located close to those served
- Offices and meeting rooms for planning and interaction with students and the community
- The campus open to the community, with special consideration given to parking, obvious entrances, and security
- On-site and off-site services, classrooms, and meeting spaces
- Specialized facilities on and off site planned through joint-use agreements between cities, counties, and schools
- Work and presentation areas, technical labs, career academies, large meeting rooms, and other facilities arranged to support a variety of new program relationships
- Flexible classrooms using a variety of learning spaces that include project work space, large and small labs, large- and small-group instruction spaces, and technological capability
- Spaces for present and future technology needs: desktop computers connected to local area networks with the Internet, video display monitors, telephones, training centers, and empty conduit for expansion and updating of equipment

Concept 2 Developing Powerful Teaching and Learning

"Teachers have to redesign their courses for higher level student work and use methods that enable more students to succeed at this level. . . . [Students] need [spaces] to formulate and solve problems; criticize their own work; work in teams; communicate about what they are doing; and achieve mastery of a topic, skill, or craft. The learning process draws students in, captures their interest, and engages them in their own development."

Second to None: A Vision of the New California High School.

Students collaborate as active, powerful learners. Teachers challenge traditional practices, making a stronger connection between the curriculum and real life. Professional/vocational opportunities should be available to augment powerful teaching and learning (such as apprenticeship or work/study programs, business employees as instructors, and adopt-a-school programs).

Powerful learning requires that students be active in their education, research topics they believe are relevant to their needs, and develop their own paths of learning. They collaborate with other students as learners and as teachers, participate in community affairs, or take advantage of learning opportunities off campus. This process requires spaces, both formal and informal, in which to interact and in which to present material and display projects.

Powerful teaching requires that the school provide optimal affirmation and positive affiliation for each student through the use of mentors, academic support networks, peer counseling, tutoring, contact with the community, physical comfort in a pleasant environment, and adequate evaluation. Each student will have a learning plan that is tailored to his or her needs and that provides parents with a clear understanding of expectations. Teaching is designed to engage and motivate students. It emphasizes critical thinking and problem solving and encourages opportunities for collaborative, integrated, and active learning with the teacher as a coach/facilitator. Teaching through interaction and coaching rather than lecturing will require fewer standard classrooms but more private offices, group spaces, and storage for ongoing projects.

Methodologies

This concept includes emphasis on the core curriculum as a component. The school is organized to provide students with exposure to all the basic knowledge an educated person should have. This basic knowledge should enable the student to continue further academic preparation through higher education or to opt for technical training, which would prepare the student for a career directly from high school.

Core academic classes should contain heterogeneous groups with sufficient space for active learning experiences. The core group might be organized physically into clusters of classrooms and support spaces to foster a greater degree of sustained teacher-student interaction. Staff and students assigned to clusters develop long-term support relationships.

The school establishes content and performance standards in language arts, mathematics, science, history-social science, foreign languages, visual and performing arts, health and physical education, and career preparation. Districtwide outcomes are clearly stated for students and are based on national standards, state curriculum frameworks, and local expectations. All students are expected to achieve those outcomes. Staff and students at each school develop teaching and learning strategies to ensure that all students will achieve.

A student learning plan is developed for each student. Parents are included in planning student curricula and career fields of study. An adequate adult support system is provided through colleges and businesses linked to the school's curriculum planning process. These businesses are also involved in providing extended learning opportunities with easy access to advanced courses, libraries, and technical preparation areas.

The school calendar provides students and staff more time for individual and group learning activities. Students' homes are linked to the school and classroom by technology, cable television, community libraries, and databases.

Management information systems are provided for use by students and staff for educational planning, research, communication, and evaluation of progress. The systems will link schools to libraries, homes, classrooms, and external support services.

School districts will adopt a comprehensive accountability system to measure student performance annually by individual, school, and district results to determine whether students are achieving below, at, or above grade-level expectations.

Computer areas within the school are available for student use during and after the regular school day.

Career guidance centers and technical preparation areas are provided. Adults and the community in general use school facilities for learning and recreational opportunities. Businesses provide opportunities for internships for student credit.

Design Implications to Consider

- Classroom spaces that include areas for large- and small-group learning and areas within the school for use in planning, collaboration, and counseling
- A career guidance center
- Space for new technology and communication systems between school and home
- Display space in classrooms and other areas for student work, career information, and internship and apprenticeship opportunities
- An information network, through joint-power agreements, with voice, video, and data network providers

- Space for a school-based student support system that links the school to community resources and a learning resource center
- Small spaces throughout the school to increase the involvement of administrators and counselors with the students and teaching staff
- Resources within the community accessible to mentors and students (e.g., parks, museums, community colleges, universities, and businesses)
- Natural environments as places for instruction, communication, and contemplation
- Distance learning with connectivity to institutions of higher education

Concept 3

Creating New Professional Roles

"Every few hundred years in Western history there occurs a sharp transformation . . . within a few short decades, society rearranges itself: its world view, its basic values, its social and political structure, its arts, its key institutions. Fifty years later, there is a new world and the people born then cannot even imagine the world in which their grandparents lived and into which their own parents were born. We are currently living through such a transformation."

Peter Drucker, *Post-Capitalist Society.*

Creating new professional roles means establishing an environment of professionalism in preparation for systemic change. A *professional environment* allows teachers to (1) view themselves as a community of learners; (2) develop partnerships with parents, community, and colleagues; and (3) have sufficient time and support to implement reform. A professional environment further means broadening the concept of staff development and ensuring that the use and dissemination of resources reflect the mission, goals, and objectives of the educational program and the collective opinion of the school staff. At the school district level, a professional environment means greater involvement of the entire educational staff and community in planning and implementing curricula and policies and in administration.

Computer hardware and software electronic communication tools (e.g., electronic mail; CD-ROM libraries; voice, video, and data network access; and worldwide Internet connectivity) are provided to support teacher planning. Preparation and specialized storage areas and office spaces are provided for teachers and staff to plan for the instructional program.

Schools are built to accommodate interdisciplinary teaching so that teachers from differing disciplines can work together. Administrative offices are decentralized to facilitate collaboration and shared decision making. Teachers will be provided with up-to-date office and planning spaces convenient to their classrooms and to teaching and planning resources.

Methodologies

Teachers create activities that move students toward a deeper understanding of the curricular material. Experimentation in the classroom is encouraged, and teachers are provided with the time and support to implement change. Traditional teacher isolation is broken.

Teachers define what is high-quality, long-term staff development. They are afforded time to study current research to enhance teaching/classroom practices. Teachers use the Internet to access resources for lesson planning. Teachers decide how the resources of the school are to be allocated.

All the people involved with the education of students (e.g., parents, community members, businesses, teachers, and colleges) are involved in decisions regarding student work.

Design Implications to Consider

- Adequate administrative, student services, and conference areas; adequate planning and storage areas; and spaces for teachers and staff in proximity to teaching stations
- Up-to-date spaces, technology, and resources that support teacher and staff instructional program planning

Concept 4

Establishing a Comprehensive Accountability and Assessment System

"The high school has a comprehensive accountability system featuring assessment based on student performance that is relevant to a student's future success and motivation. . . . Standards are grounded in applications that extend beyond school and are set in partnership with business and postsecondary educational institutions to ensure compatibility with entry-level requirements."

Second to None: A Vision of the New California High School.

A comprehensive accountability and assessment program continuously monitors student progress. Content and performance-based standards and assessment of how well students are meeting standards will require schools to compile graduation portfolios.

Technology will be incorporated into every learning space to obtain and disseminate information and to provide students with the ability to display projects in multimedia.

Teacher and students will have work spaces and storage areas for the collection, preparation, and updating of projects that follow students throughout their schooling.

Methodologies

The methodologies used to implement accountability and assessment require teachers to establish and articulate student outcomes, identify student performance data, and use data gathered from student assessments to design future work. To be effective, teachers develop common standards and allow students to demonstrate their competency in specific disciplines and in personal ways. Assessment should be continuous and integrated throughout the school experience.

Interdisciplinary projects, portfolios of student projects, and student learning plans will be integral to student accountability and assessment. Performance assessments or graduation portfolios, clearly connected to classroom instruction, should accurately demonstrate a student's competency and help the student respond to unanticipated events and the world of work.

Design Implications to Consider

- Open and flexible classroom space to allow work on projects in groups of varying size
- Specialized spaces to accommodate exhibitions
- Technology in every learning area to access and disseminate information and to display students' multimedia projects
- Teacher and student work spaces and special storage areas

Concept 5 Providing Comprehensive Student Support

All students can expect support that is personalized and allows them to be successful in the core curriculum. Student education will be based on high standards for every subject at every grade level, and students will be expected to meet these standards. Through technology, students are connected to the school and thus to a wide range of integrated services, activities, and opportunities that can assist them in reaching their goals. The school is connected to the community through workplace learning and involvement in service learning partnerships.

Support services are accessible to all students. Each student's needs should be addressed in the least restrictive environment possible and through a student learning plan tailored to those needs.

"The sad, rotten truth is that most of the public places through which children pass look better than their schools. What is the first impression you get when you walk through some of the older campuses? That this is not a place society values."

Diana Griego Erwin. *The Sacramento Bee*, October 8, 1995.

Methodologies

This concept can be implemented by developing a full-inclusion model for all students, with students grouped into smaller organizational structures so that student-to-student and student-to-teacher interactions are manageable. Basic support could be provided with teachers and other adults communicating with parents on a regular basis. Ancillary support ensures that students and their families have access to on-site medical and social services, including on-site child care for young parents as well as for staff.

Students may receive some services from the comprehensive high school and some from a continuation high school, alternative program, or independent study program. Other services, such as adult language classes, may be provided at locations other than school buildings.

Tutorial programs, extended hours or days of instruction, and summer school may be important forms of support for some students. Each adult on campus may be responsible for a small group of students for the entire time these students are in high school. Much of the career information is available through a media center accessible from anywhere on campus or from home or the community.

Design Implications to Consider

- Classrooms large enough to accommodate wheelchairs, aides, and technical services
- Specialized rooms, such as science labs, counselor offices, administrative services, and teacher planning rooms, distributed across the campus
- Specialized facilities to house special clinics, social services, a community library, and child care
- Continuation school and independent study programs located near the comprehensive high school
- Space for tutors in regular classrooms, an expanded library, and small meeting rooms

Concept 6 Providing Career Paths to Desired Outcomes

> **"Learning takes place when the learner regards what one needs to know as relevant to their lives; when teachers are committed to students' success; when the environment allows for differences in learning methods and style."**
>
> "Effects of the Physical Environment of Schools on Students," a paper presented at the 65th Council of Educational Facility Planners, International Conference, Milwaukee, Wisconsin, October, 1988.

Students have a defined curriculum that prepares them for college and career opportunities. These paths are linked initially by a core curriculum common to all students in the school. This curricular path provides the knowledge, skills, and values required for success beyond high school. Each curricular path prepares students to think conceptually, solve complex problems, and communicate ideas. Courses will be offered in a coherent sequence and will lead to a two- or four-year college program or to a successful transition from school to a career. Staff should encourage students to make choices that prepare them for college or a particular career. Through partnerships with community members, students will be supported to become responsible parents, employees, consumers, neighbors, volunteers, and voters who care about their own community.

With new techniques and technology, good communication systems between school and home can extend opportunities for learning and improve communication between home and school. Sufficient display space is available in classrooms and external areas for information about colleges, careers, and internship and apprenticeship opportunities and for recognition of student success.

Methodologies

The methodologies used to implement this concept include core academic classes that contain heterogeneous groups, with sufficient space for small- and large-group learning activities and cluster areas that foster a greater degree of sustained teacher-student interaction and enable staff and students assigned to these clusters to develop long-term relationships.

The school district establishes clearly stated content and performance standards for student learning, which all students are expected to achieve.

Regular opportunities for contact between home and school are provided. An information system links schools, libraries, homes, classrooms, and external support services.

Businesses and nonprofit organizations provide opportunities for internships.

A core academic program and the school calendar (daily and year-round) ensure that students and staff have sufficient time for individual and group learning activities and allow for feasible learning opportunities for students.

Design Implications to Consider

- Student computer areas
- Sufficient areas within the school for classrooms, planning and collaboration, small- and large-group learning, counseling, and a career guidance center
- A learning resource center with sufficient space and technology to store and allow retrieval of materials that support the curriculum
- Academic forums, retreats, conferences, or in-service training hosted by business, either on or off site

1997 CASH/AIACC Excellence in Design Award

Award of Excellence

Palm Springs High School

Palm Springs High School, Palm Springs Unified School District, Palm Springs, California, is offered as an exemplary restructured campus.

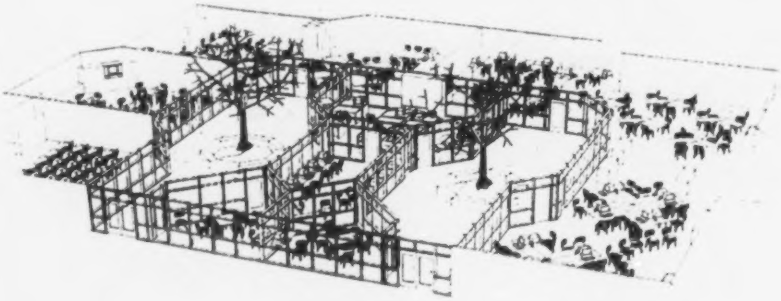
Palm Springs High School is an example of a facility that successfully made a transition from a traditional comprehensive high school curriculum into a restructured curriculum reflecting the educational needs of a growing, culturally diverse student population in grades nine through twelve.

Construction Data on Palm Springs High School	
Grades:	Nine through twelve
Student Population:	1,800
Type of Project:	Modernization
Funding Source:	State aid
Construction Completed:	December, 1996
Square Footage:	105,253 square feet
Construction Cost:	$17,940,000 ($116 per square feet/ $9,966 per student)
Architect:	Trittipo & Associates, Architecture and Planning Contact: John R. Trittipo, AIA (619) 931-8577
School District:	Palm Springs Unified School District Contact: William E. Diedrich, Ph.D. (619) 416-8000
Contractor:	Shirley Bros., Inc., Pasadena, California

Basic Site Design

The existing campus, evolving over many years, was difficult to supervise and maintain as a safe campus. The high school was a part of the community and ready to be renovated along with other aging public facilities. The new facility meets the community's desire to maintain the architectural character of the original Palm Springs High School building and to blend contextually with the revitalization of old downtown Palm Springs. By integrating the aesthetics of the existing school with

Reconfiguration of Spaces
To implement a cohesive transition from a comprehensive high school to a restructured campus, extensive space configurations were designed on the existing campus. In addition, more accessibility to the adjacent joint-use athletic fields was considered very desirable.



Palm Springs High School. The reconstructed facility meets the community's desire to maintain the architectural character of the original building.

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contemporary enhancements, the high school has contributed to revitalizing the community while bringing a higher level of education to the students.

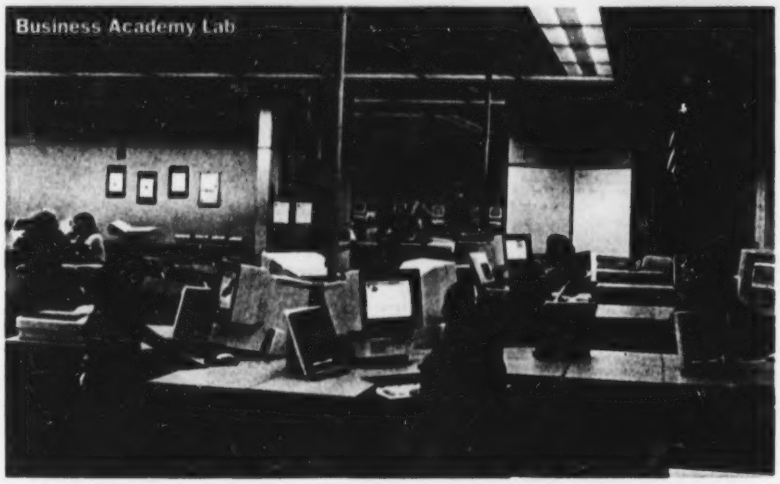
Modernization construction funds at the old campus combined with local bond funds allowed a budget to meet facility needs consistent with the educational goals and restructured curriculum.

Academic Facilities

Educationally, the core "curriculum houses" for grades nine and ten and the "academies" for grades eleven and twelve are configured to support the staff's implementation of the "Focus 2000 Restructured Proposal" developed by the campus/district/community educational specifications committee.

Entry to Business Academy

Business Academy Lab



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